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Wing Commander I & II: The Ultimate Strategy Guide

Mike Harrison
(with a Foreword by Chris Roberts)



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Foreword

I first met Mike Harrison while on a PR tour in Baltimore for *Times of Lore* and *Ultima V*. Mike was working for MicroProse at the time as a member of their sales and marketing staff. Obviously, he didn't have any vested interest in ORIGIN's products, (quite the contrary in fact, considering the fierce competition that exists between software companies,) but I'll never forget how he took an hour out of his schedule to talk with me about how *Times of Lore* worked. That was far more time than any of the other salesmen or journalists gave the game, and as we talked I realized that he was every bit as interested in computer game design as he was in software sales.

Over a period of time our friendship evolved. Mike became a freelance writer/editor and began taking on numerous short term contracts with ORIGIN. In fact, he was in Austin during the early fall of '89, handling packaging and promotion for our '89 product line, when the pieces started coming together for what would become *Wing Commander*. He and Dallas Snell were among the first people to see that early, bug-ridden flight simulation. Back then the game, tentatively titled *Squadron*, was much more a straight-forward, arcade-action adventure, shooting alien ships from a cockpit, and the cinematic framework that transformed the project from game to experience was yet to come. Still, for all the faults in that rough version, Mike took a special interest in the project and wanted to help speed the process any way he could.

As the next few months passed, Mike kept in touch and eagerly watched the game develop. He became quite an expert on *Wing Commander*, and given his promotional expertise, he was clearly the logical choice to pull the game manual together. He did a fine job on that project, and now that Prima has chosen him to write this book, I am absolutely delighted. I can't think of anyone who knows more about the company, the way I work, or how we do things at ORIGIN. I was confident, from the earliest stage of this project, that Mike would do it right.

And he has. The greatest thing about this book (besides the fact that it outlines the best way to handle each mission in the

series) is that it gives you a good overview of how a *Wing Commander* game develops, and how the teams work together. The process is very similar to that of movie production, one of the reasons we use cinematic categories when listing game credits. Directors, screenwriters, artists, and programmers, all join in a creative synthesis, combining their talents over months of painstaking effort, to produce the game you finally pull off the store's shelf. With each game release, we're moving closer and closer to the realization of my fondest dream — the creation of interactive movies where YOU are the star.

So while I intend to be involved in the design of many more games in the future, I'm most proud of *Wing Commander*. And I'm happy that all of you are reading this, because it means that you're not just interested in the game, but also in the fiction we've created. That's important to me — that we create not just a game, but a complete experience — and the Ultimate Strategy Guide is a significant part of that experience.

Chris Roberts
September 1, 1991
Austin, Texas

Introduction

In August, 1989, Fred Schmidt, Origin's general manager, called and asked me to come to Austin, Texas for a couple of weeks to work with the marketing department on some special projects. During our conversation, he told me I just had to see this new game that Chris Roberts was working on. "It's an arcade-style flight simulator, Mike," he said, "and the graphics will just blow you away. You won't believe what you see."

Since Fred and I had worked together at MicroProse Software for a couple of years, I knew he was well aware of the sophistication of the polygon-based graphics in modern flight simulators. I trusted his opinion, but I wondered whether his enthusiasm was tainted by the fact that it would be one of his company's titles. After all, Chris Roberts only U.S. release up to this time had been *Times of Lore*, a great game on the Commodore, but a far cry from what was currently being developed on MS-DOS computers. After seeing the evolution of 3D graphics at MicroProse, I also realized that they weren't something you could learn to program by reading a few books.

I didn't give the game any more thought until I reached Austin, sometime in September. I spent the first couple days in meetings, never having a chance to leave the second-floor marketing and sales offices. One evening though, I ran into Chris and headed downstairs for a demonstration of what he called *Squadron*. As he booted up his 386 computer, he apologized for the lack of sound and the rather bare state the game was in. "Only a few features are functioning right now," he said with a British accent, "but I think there's enough here for you to realize the potential." That was an understatement.

The first thing I noticed was the cockpit. The artwork was more compelling than any I'd ever seen before, and instead of just a naked array of electronics, there was a joystick with a hand on it. This had been Denis Loubet's first chance to work with 256-color VGA graphics, and he'd outdone himself. I felt like the cockpit actually wrapped around me, and in the darkened room, the colors jumped off the screen. Okay, I thought, the cockpit is pretty, but that won't sell the game all by itself.

Chris started moving the ship around in space, and I noticed that the movement of the joystick and hand on the screen matched the player's. That was something I'd never seen before, and it was a neat effect. A ship suddenly appeared in the viewscreen and Roberts started firing these round, red pods at it. The ship exploded in a ball of fire, and pieces of debris filled the screen. A face appeared in one of the cockpit displays and text appeared congratulating the pilot for a nice shot.

"Who is that?" I asked.

"It's your wingman," Chris said, and proceeded to explain that one of the concepts behind the game was that you would always fly with another pilot on your wing. "You can communicate with your wingman and control his actions," he noted.

The game didn't have any sound yet. You couldn't do anything but fly around and shoot a few enemies. The storyline hadn't really been fleshed out. Still, I was mesmerized.

I noticed that the graphics weren't based on polygons and Roberts started talking about the technical aspects of producing bit-mapped images in a 3D simulation. What he said flew right over my head, but I walked away with a new appreciation of Chris Roberts' talents as a designer and programmer, and Denis Loubet's skill as an artist. I just shook my head in amazement, told Chris he was a magician, and walked away.

It would be eight months before I would see the game again. In August 1990, Origin hired me to fill in for Cheryl Neeld, their creative services manager, who was out on maternity leave. I spent a couple months in Texas, helping schedule, budget, and produce many of the pieces for their fall products and promotions. With a September release for *Wing Commander*, I could now see the game in all its glory.

This time the demo took place with a Roland LAPC-1 sound board installed on the system, and all the cinematic scenes had been added to the game. What a difference. The original demonstration had me interested, but now I knew that I was sure to become an addict. I couldn't wait to leave Texas, get home, and boot up the game on my own computer. I didn't get the chance for another six weeks, but I made up for lost time by staying glued to my computer. When Prima called and asked me to write a book about *Wing Commander* and the sequel, I never hesitated.

About this book

When I started writing this book, I made a couple of assumptions. The first, and most important, was that readers would like to become better players of the game. The second was that they would be interested in learning about the development process and the people who made the game possible. Those assumptions led to the organization of the book.

Part one, which forms the major part of the book, encompasses the memoirs of a retired pilot who flew all the missions in *Wing Commander I*, *The Secret Missions*, *The Secret Missions II*, and *Wing Commander II*. While the memoirs provide fictional context for many of the characters in the game, they also provide the forum for general hints and tips, and outline the strategy and tactics I used to complete every mission. It is worth mentioning that the tactics and strategies that I used in each mission are not the only ones that can lead to the successful completion of the games.

If you are searching for general hints and tips to use in the original *Wing Commander* game or the *Secret Missions* disks, the Academy Years chapter includes four sections that you will find most helpful. First Lessons, Strategy and Tactics in Combat, Kilrathi Ship Tactics, and Know the Kilrathi pilots provide that basic information.

If you are looking for general hints and tips to use in *Wing Commander II*, turn to the beginning of the Vengeance of the Kilrathi chapter.

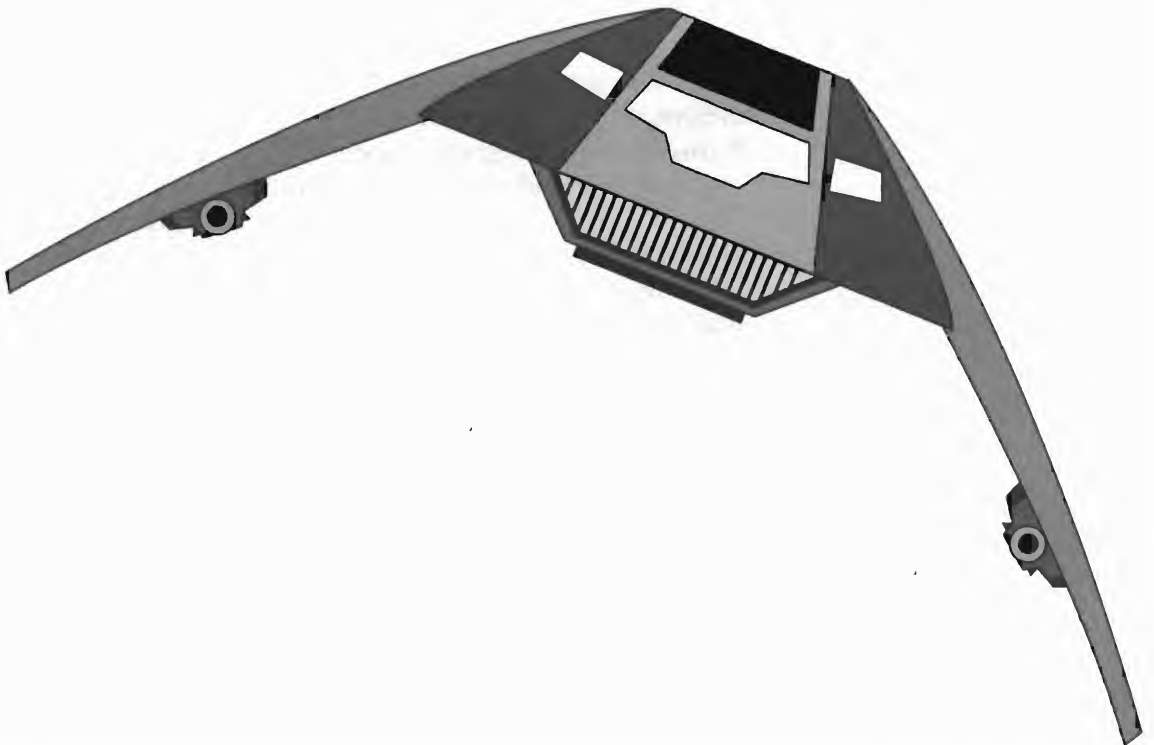
In addition to the basic hints and tips, each mission is discussed individually for each game or add-on disk, in the Vega Campaign, Thor's Hammer, Firekka Missions, and Vengeance of the Kilrathi chapters. There you will find maps and text that discuss the location and type of enemies encountered and the specific methods to complete each individual mission.

Part Two of the book discusses the making of *Wing Commander*. Through interviews with many of the participants, you'll learn about how a computer game is developed at Origin and how it mirrors the making of a Hollywood film. I found it fascinating, and hope that you will as well.

1850-1851

PART I:

**The Memoirs of Lieutenant Colonel Carl T. LaFong:
The Kilrathi War's Greatest Ace
(TCSN, Retired)**



Foreword

by Lt. Colonel Carl T. LaFong (TCSN Retired)

I never thought I would write a book about the Kilrathi Wars. After all, the 27th century's greatest historians, novelists and journalists have already dissected the subject. Dr. David Johnson's four-volume *Intergalactic War* was called "the finest historical work in the last two hundred years." Sandra Chang's *Illusions*, a fictional work based on her experiences as a war correspondent for the *Global Times*, won the Nobel Prize for Literature in 2689. So why would I choose to compete with such a group?

My background is certainly a factor. I was assigned to the *TCS Tiger's Claw* in 2654, immediately following my graduation from the TCSN Academy. I spent the next two years as a pilot on the space carrier and was one of the few who survived the Vega, Goddard and Firekka Campaigns. With combat commissions, I rose from 2nd Lieutenant to Lt. Colonel during those years and returned safely from more missions than any other pilot in history. But that's only part of the story.

I was blamed erroneously for the destruction of the *Tiger's Claw* and suffered the indignity of a court martial. I was exonerated on all charges, but I was known as the "Traitor of K'Tithrak Mang" for the following ten years that I spent at the Caernarvon Space Station. During the Enigma Campaign I served aboard the *TCS Concordia* and the truth concerning the demise of the *Tiger's Claw* finally came out.

A little more than two years ago, I received an unusual call from this brash kid who identified himself as Tristan Roberts. I could tell he expected me to recognize the name, but he might have been the local cat-catcher for all I knew. "LaFong," he said, "I want to hire you as a consultant for my next bionetic holo-vid." After some pointed questions, I figured out what he was doing and what he wanted me for.

Now I don't keep up with the celebrity scene, but it turns out that Roberts is the hottest director in the holo-vid industry. Well, he had decided that his next projects, the *Wing Commander* series, would let people experience the Kilrathi Wars as a pilot on the *TCS Tiger's Claw*, and in the sequel, aboard the *Concordia*. That's where I entered the picture.

"I pride myself on accuracy," Roberts said, "and you're the man who can make sure I achieve my goal. I don't just want the numbers, times and dates correct; I want to make sure the feelings, emotions and relationships are on target as well." Following many hours of negotiation, and his assurances that the holo-vid would stick to the way things really were, I agreed.

I don't think I've ever had so much fun and been paid for it as well. I was treated like royalty, squired around by a grade-5 robot chauffeur in a spanking new solar, anti-grav limo, and fed fruits imported from the second planet in the Brimstone System. I'll tell you, it was quite a few cuts above what an old, retired naval officer is used to. As far as my consultation, Roberts kept to his word and made every effort at re-creating the tension, agony and exhilaration of the missions flown from the carriers.

Recently released, *Wing Commander I* and *Wing Commander II* have spawned a resurgence in public interest about the Kilrathi Wars in general, and the vital role of our space carriers specifically. I've even found myself on the talk show circuit, promoting the holo-vid and answering questions about my combat experience. It's been pretty heady stuff for a 73-year-old codger who thought vivid memories were all that remained in life.

As the project progressed, the idea of writing a book kept sneaking into my thoughts. In the first place, while the new entertainment technology is astonishing, it can't re-create completely the 15 years of lessons learned and friendships earned aboard the *Tiger's Claw* and *Concordia*. A book can, or at least it can from a different viewpoint, and I hope that has been accomplished on the following pages. Secondly, since the vid-game is so realistic, reading of what actually took place on the missions in the Kilrathi Wars will help players who challenge the cats-eyed aliens in the detailed simulation. Finally, while we haven't encountered hostile alien races since the Kilrathi, the possibility always exists, and today's pilots might benefit from this first-person account of those horrifying years.

During my stint at the Terran Confederation Space Naval Academy, I made a promise to myself. I vowed that if I ever had the opportunity to reach an immense group of people I would be sure to deliver a special message. I finally have that chance...

BEAT ARMY!

The Academy Years

It was a tired, nervous and impatient group. We'd gathered here the night before, 1200 kids who had traveled from the corners of Confederation space, to take the shuttle to the Space Naval Academy on Hilthros. We were the 201st plebe class, and after a short orientation by Midshipman Third Class Tanaka Mariko, we'd been ordered to report early the next morning for our flight to the new facility.

The ship was absolutely immense. Only 1199 of us reported on time, so we were stuck in the launch bay, worried about meeting our jump time to Hilthros. We were waiting for Todd Marshall and gassed that he was delaying our flight. After all, we had worked toward this goal for 18 years and were ready to get the show on the road. The anticipation was devastating.

The cabin door suddenly burst open and a panting, red-faced Marshall stumbled in. He tossed his duffle into the overhead storage compartment and turned to Lt. Mariko.

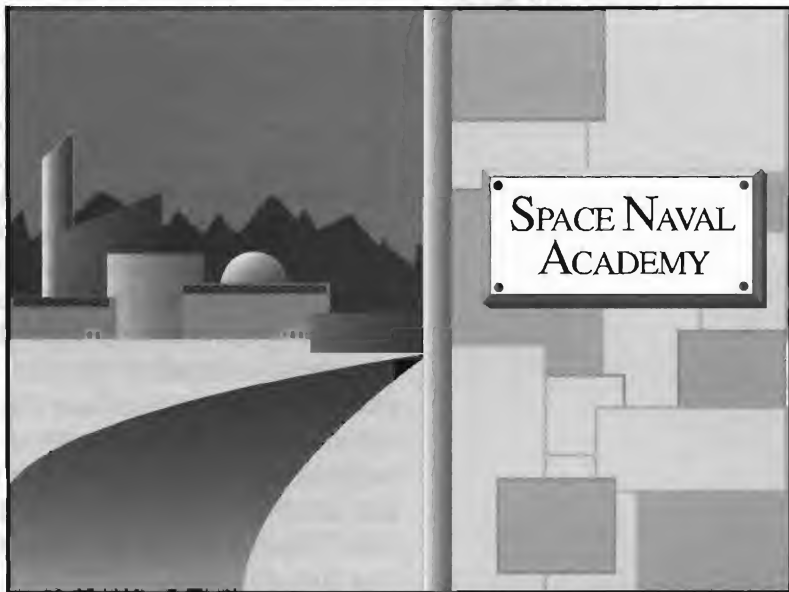
"I know I'm late, but I had to say my goodbyes to that waitress from the sky-lounge," Marshall said with a wide grin, "and she wouldn't let me go. I'm sure my classmates don't mind. After all, I'm the one who's going to shatter every academy record and graduate Number One in the class."

The hoots and groans died down when the passengers noticed the rage building in Mariko. The red face, tight jaws, and clenched fists were a dead giveaway.

"Stow your gear and hold your tongue, catbreath," she bellowed. "You're starting your space academy career with 15 demerits and the only record you're likely to break is for the number of times you pull KP or worse."

Mariko stalked toward him until only two inches separated her face from his.

Meeting a Maniac



"We're at war, Mister. And from what I've seen so far I could put your brain on a spoon and it would look like a marble rolling around in one of the moon's craters. That's not a great recommendation for a prospective combat pilot. Now take your seat and stay out of my sight."

Unfortunately, the only empty seat was next to me. "Boy, she's a bit touchy this morning," he whispered.

"I can understand why," I replied.

For the next three hours, Marshall treated me to the "short" version of his life story. He boasted of his grade point average, placement-test scores, athletic prowess and sexual conquests. He was undaunted when I tried to nap, and would nudge me repeatedly before continuing to harangue me with stories of his flying experiences (his father owned a charter flight service on Leto) and educational awards. The guy was as cocky as anyone I'd ever met, and personified almost everything I find unattractive in an individual.

Finally I lost it. I reached over, grabbed the front of his shirt and twisted. "Marshall," I whispered, "I'm giving you only one chance. Steer clear of me or you'll think you've run into a runaway laser saw with a taste for flesh. If you're good, you can prove it at the academy, but words won't impress me."

The Plebe's Handbook

A voice came over the shuttle's speaker system and cut through my anger. "We're approaching our jump point, so please return all tray tables to the upright position and fasten your safety harnesses. The captain will turn on the harness light when it is safe to move about the cabin."

Although the gee-force effects were negligible, the change in our speed was reflected in a dazzling light show outside the porthole. Apparently, new ranges of the light spectrum become visible when the neutron warp drive is enabled. It seemed like an hour, but it was only minutes before the jump was completed and the lights were replaced by black space.

Mariko walked to the front of the cabin, grabbed a microphone, and turned to face the 1200 plebes. "You're in for a surprise when we arrive at the academy," she announced. "I will pass out the official plebe handbook and I strongly suggest you take the last three hours of our trip to study it. Don't waste any time." I took my book and began reading. I noticed that Marshall was already asleep.

The handbook detailed everything expected of a plebe. It explained how beds were to be made, shoes and buckles shined, and the exact placement of every piece of clothing in the footlockers in each room. An entire section dealt with the 800-year-old Honor Code that would guide our actions throughout the next four years. The honor code wasn't a written regulation, but a principle that bound every midshipman. Basically, it stated that lying, cheating, and stealing would not be tolerated. In practice, it also meant that a midshipman must report any instances of lying, cheating, or stealing. A middie who knew of such behavior without reporting it was as guilty as the individual who committed the act.

The regs also included more than 50 lists that we were expected to memorize, information on formations, mail call, telephone usage, and restrictions on relationships between the sexes.

As I thumbed through the book, a single folded sheet fluttered to the floor between my feet. On the front was written *A Special Message from the 1st Class*. I picked up the sheet and turned the page to discover the following:

As a Plebe, you represent the lowest form of life at the TCSNA. You are lower than a sand worms in the Brimstone System, lower than the bilge in an ancient frigate, lower than a hairball in a Kilrathi's innards. Until the end of your first year, you will be known as "youngsters," and as such, you will cater to the whims of those who arrived at the academy before you. The members of the 3rd, 2nd and 1st classes of the academy look forward to your imminent arrival.

Before applying to the academy, I had read every article I could find about life at the most prestigious educational institution in the galaxy. I was astounded to learn how many traditions had managed to remain intact through so many years. Since the beginning of the Galactic War, however, the focus had changed. While the original space academy was preparatory to flight and support classes, since 2634, when war officially had been declared, the academy had become a training ground for combat pilots and support personnel. In any event, I felt I was prepared for anything. It wouldn't take long for me to discover just how naive I had been.

A Welcoming Committee

We docked at Hilthros and proceeded by grav-sled to the academy grounds. Marshall had latched on to a couple of nervous-looking plebes and was regaling them with the same tall tales I had already heard. When the door slid open, the two suns of the system were blinding. The sound was deafening.

"Move it, you pitiful collection of brain-dead mutants!" The words came from the lips of a middie who looked like he might have eaten a jar full of razor blades for breakfast. His voice must have been amplified with reverb. "Double-time to the white lines, drop your gear, fall in and do it now!"

We stumbled all over ourselves as we scrambled to the white lines. Other middies collected our duffles and threw them in a growing pile.

"Stand at attention, arm's length apart, suck in your guts, eyes front, hands at your sides, and no talking!" barked the officer. It took 1200 of us some time to form our lines, and I must admit we were not a pretty sight.

"I'm Midshipman Lieutenant Mickey Bitscoe, and I have the unfortunate, and incredibly dull task of leading you through your first day at the academy. As you can imagine, I am not a happy man ..." Suddenly, he stopped and stared down the line to my left. I cut my eyes in the same direction and saw that Marshall had stepped forward and raised his hand.

"This oughta be good," I thought.

The lieutenant stalked toward Marshall. A sneer was growing as he approached the grinning cadet.

"Ladies and gentlemen, it seems that one of your friends has a problem. I enjoy solving problems," he said. His tone was dripping with sarcasm. "Is there something I can help you with, youngster?" he crooned.

"Well, sir, I was just wondering about those duffle bags. Where are they taking them? You see, I brought along some things to help me decorate my room and I have some other personal effects I brought from Leto that I'll need as soon as ..."

The lieutenant cut him off as he put his arm around Marshall and led him forcefully to a position in front of the formation. We'd only been standing outside for a few minutes, but sweat was already staining our clothes.

"I really thought everyone in this year's class would have a three-digit IQ," the lieutenant bellowed. "Obviously I was mistaken. Since Mr. Marshall is so concerned about his gear, I'm

going to allow him to load all 600 bags on the conveyor while we wait. He won't, however, load his own bag. That one he can carry with him for the rest of the day."

It took Marshall almost two hours to finish his task. Meanwhile, the rest of us stood at attention and watched beads of perspiration drip onto the grey dust of Hilthros. The lieutenant sat in the shade of the grav-sled, sucking on ice cubes. We were really thrilled with Marshall and excited to be standing around.

The lieutenant called out names and organized 1200 of us into twelve companies. The twelve companies were divided into four battalions and two regiments. I was in 3rd Company, 1st Battalion, 1st Regiment. Marshall was too.

The company commanders, under the direction of Lt. Bitscoe, took over. Then we started marching. We marched to the barber, where we stood in line until everyone's head was shaved. We marched to the medical facility, where we waited in line until everyone had received a physical. We marched to the administration building, the mess hall, and the quartermasters, and we waited in those places too. When the commanders discovered a few minutes of free time, we marched for their amusement, since even six hours of trying to walk in formation hadn't yet taught us to march in step.

The only real respite from the grind came during and immediately after the swearing-in ceremony that night. In fact, until that moment we weren't really plebes. Everyone was milling around after the big event when I saw Marshall heading my way. I tried to duck him, but I felt a tap on my shoulder. "Hey, buddy, I just got some good news," he said. "You know those demerits Mariko gave me on the shuttle — well, they were just a lot of hot air. Since I wasn't a plebe yet, they didn't count. I'm home free!"

I congratulated him and walked away.

I really took my commitment to the academy and the Confederation seriously, but when I finally reached my room that night, I was questioning my sanity. I didn't feel like I had any freedoms left in my life. As a plebe, I couldn't date, couldn't drink, and wouldn't be able to leave the academy for the first time until Thanksgiving. I was being told how to make my bed, stow my gear, and shine my shoes. I was told when to march, when to study, when to appear in class, and when to exercise.

My life was out of control.

"What have I gotten myself into?"

The September Blues

It had been a couple of weeks and I really couldn't believe I had put up with all the incessant badgering by the upperclassmen. If it hadn't been the quickest way to learn to fly and the only chance to combine flying with fighting the Kilrathi, I'd have walked a week before and never looked back.

I understood the importance of discipline, the value of following orders, and the need to strip away the veneer of individuality, but I couldn't believe this was the most effective way to teach those goals. I'm afraid I was a casualty of the old-boy network that said, "I put up with all the crap when I was at the academy, and you will too." You'd think 800 years would have resulted in some progress. The only positive change I had heard about was admitting women, and that was almost 700 years ago.

Activity in the mess hall reflected just how incredibly nonsensical this experience could be. I could put up with standing at the table with my food tray until all the upperclassmen were seated. I even sang some of those silly songs at the top of my lungs while perched on one leg on top of the table. One day, though, I almost lost it.

As we all know, table manners are vital to the war effort. We'd been taught that a plebe's left hand always stayed in the lap unless cutting or holding something with a knife. Once you'd finished cutting a food item, the knife was to be placed on the right side of the plate at a 45-degree angle, with the blade facing the inside of the plate. Unfortunately, I was the victim of the dreaded "Protractor Patrol."

I knew someone was behind me, but I never gave it much thought until an incredibly loud "Stand up, youngster!" was shouted into my ear. I jumped up to attention and put on my "Plebe's Face." That was the one where you stared straight ahead focusing on nothing, set your jaw, and prepared for disaster. This definitely qualified in the disaster category.

To my shock and horror, my knife was measured and found to be resting at 50 degrees. I was stunned.

"Sir, permission to speak, sir." I gave it my best effort. "I must have bumped the table when I stood up, sir. I've spent hours working on my knife-angle routine. I think this is just a big mistake, sir."

"Are you telling me I'm wrong, blister-face?" he intoned. "Are you questioning the integrity of a 1st Classman?"

"N...N...No, sir," I stammered. "Not wrong, sir. I just think

you were so engrossed in studying my table manners that you failed to see me hit the tray when I stood up.”

“Give me fifty,” he screamed, “while I think up a suitable punishment for your transgression.”

I was surprised at his use of three-syllable words, but I hit the deck and started counting out my pushups. By the time I finished, he was ready.

“Since you’re obviously not ready for the intricacies of dining with traditional utensils, snail-brain, I’ve decided that you can dine without them for the next seven days. Both hands will remain in your lap once you’re seated in the dining room. If you spill any food, we’ll add another week to the punishment. Commence eating.”

Why do they have to humiliate us, I thought. It’s hard enough passing the white-glove inspections, making sure you can bounce a nickel off the bunk, and worrying about fingerprints on your spare belt buckles. I’ve already cleaned a latrine with a toothbrush, packed and repacked my footlocker until the company commander decided I could do it with a blindfold, and stood a three-hour midnight watch over a dead bug found in the hallway outside my room. I was seething as I leaned forward to take a bite of pasta and ended up with sauce all over my nose. Using a napkin with no hands is a real treat as well. Things had to get better, and they did.

While I was turned off by the academy’s juvenile life-style during plebe year, by the end of the first semester the instruction and the opportunity to fly had exceeded my wildest expectations. The schedule was grueling, with classes in physics, calculus, engineering, current events, and military history requiring more study than my first 14 years of school combined.

The competition was intense, since only 800 of the original 1200 would make it through the first year. Many washed out due to the rigors of the hazing regimen, but most simply failed to pass the accelerated courses. I wasn’t going to make that mistake. I’d come to the academy to learn combat strategy and tactics from the people who had lived it. I wanted take on the Confederation’s best in a simulated dogfight, learn about the Kilrathi from people who had encountered them, and fly the most advanced ships in the galaxy. I wanted to be a combat pilot.

The Best of Times



First Lessons

We spent hours in the simulator during the first semester, working on launch, recovery, and basic flight drills, but it was pretty boring stuff until we incorporated combat strategy and tactics. All of a sudden, the atmosphere changed. Everyone buckled down, even Marshall, knowing the information could spell the difference between living and dying.

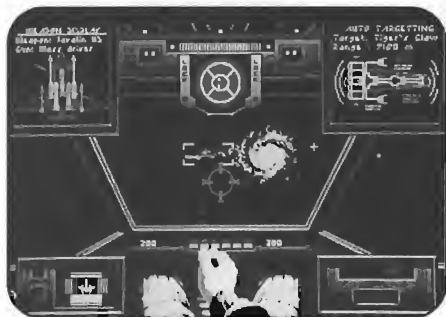
While official strategy and tactics classes didn't begin until January, the discussion during instrumentation instruction often drifted to issues that affected our decision-making process during battle.

Major Sarlee Rathji, our instructor and a veteran of the McAuliffe Ambush, repeatedly pleaded that "awareness in the cockpit is the key to a successful mission. You'll never become proficient from books, lectures or holo-vids," she said; "only practice in the simulator and real space can do that. But take these lessons seriously now and they'll turn that vital visual sweep of the cockpit into an unconscious skill. You must be able to determine your ship's and weapon's status, the enemy ship's condition, and the location of friendly and enemy ships in your area. And it must become second nature."

It didn't take us long to realize that our radar was the single most important piece of electronics in the cockpit. After all, what could be more important in a dogfight than knowing where missiles and laser fire were coming from? What other piece of gear tells you whether to launch that Pilum Friend-or-Foe missile that can lock onto your wingman as easily as your enemy? It was also the least intuitive display, and that created problems.

Before we ever hit the simulator, I pored over the sample radar displays in our training manual, trying to visualize the position of every blip in 3-D space. I thought I knew the information cold, but once we entered the simulator and the operators started moving the blips around, I just couldn't keep track.

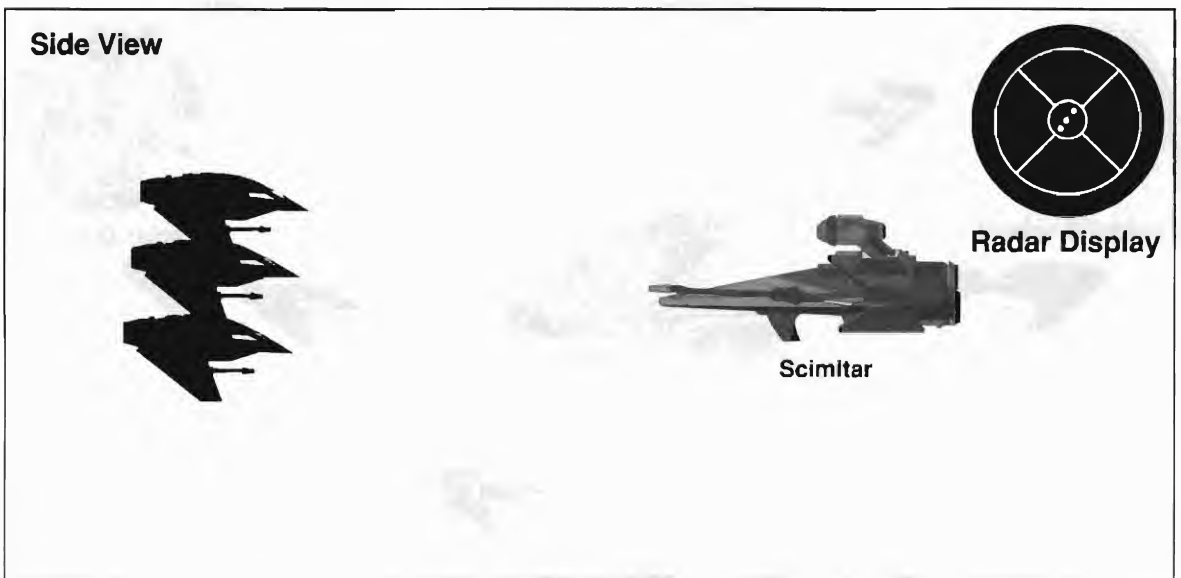
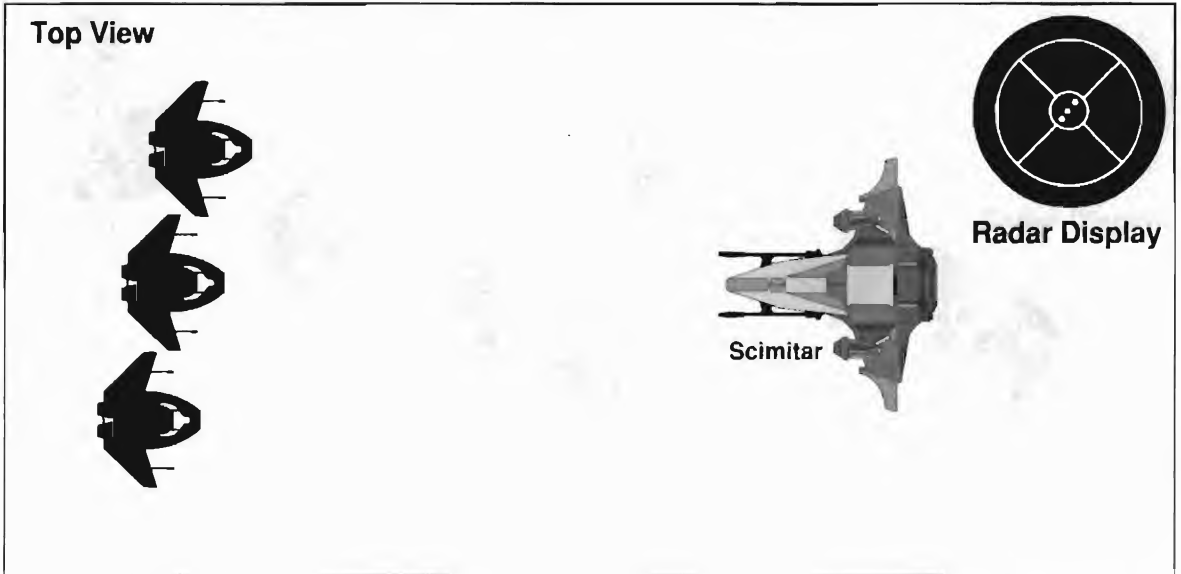
I used to go back to my room at night and draw diagrams that tracked the movement of enemies in 3-D space and the resulting radar displays that showed that movement. I never saved those drawings, but I think this series, re-created especially for the book, will give you the same insight they did me.



From top to bottom: The Hornet, Scimitar, and Raptor cockpits in the flight simulator.

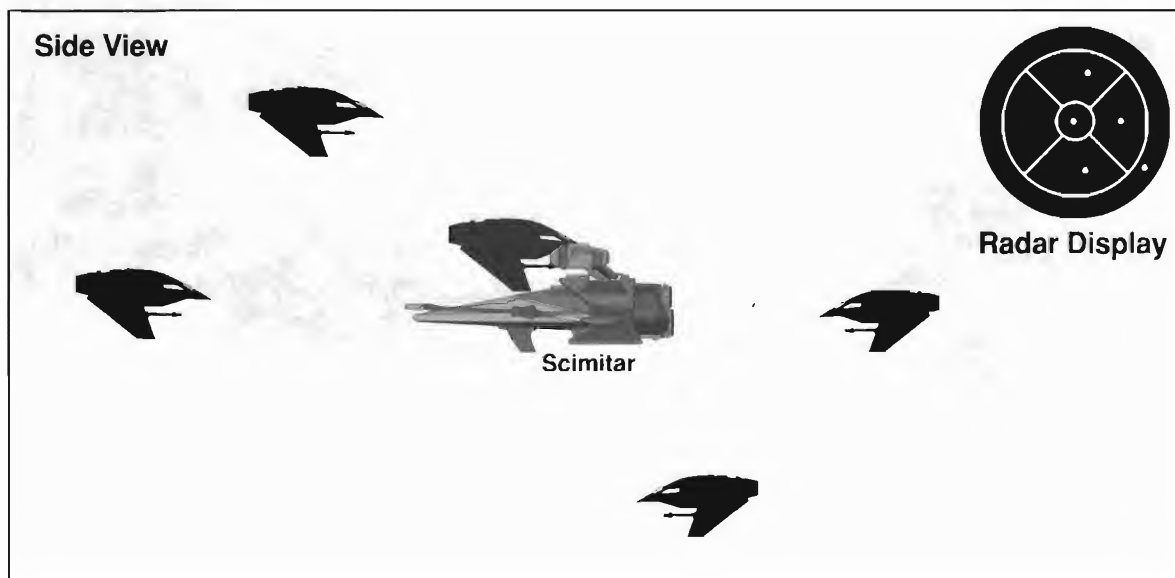
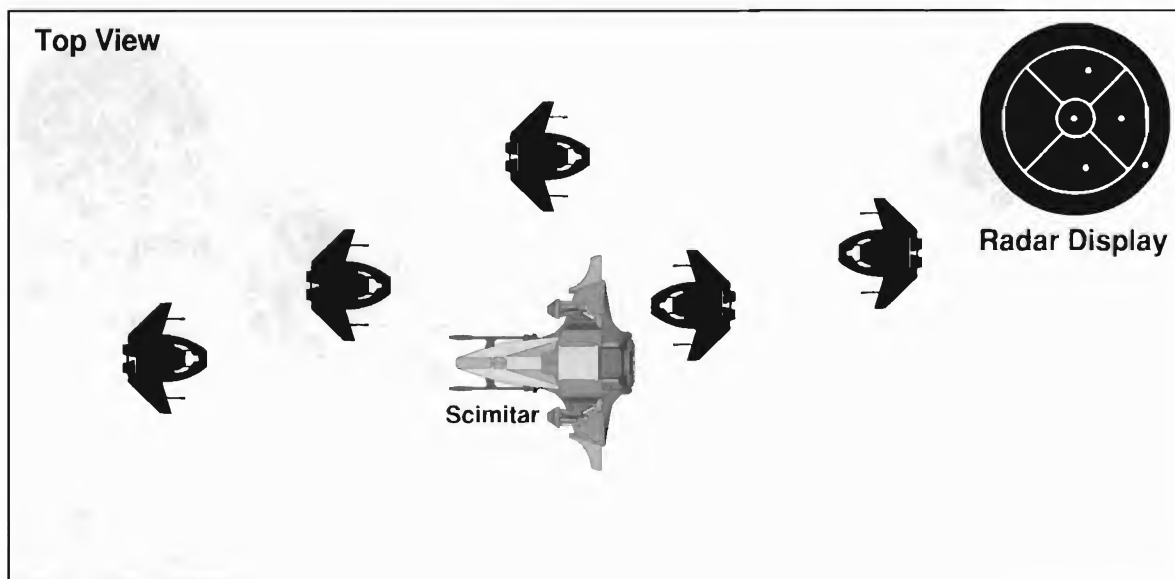
It's easy to tell when the enemy is directly ahead: the blips appear in the center scan circle on the screen. The Kilrathi won't honor you with a head-on approach very often, though. When your wingman screams that the enemy is heading your way, and it's usually more than a single wing under combat conditions, you'd better understand the situation — in a flash!

Radar Screen 1: The Enemy Approaches



**Radar Screen 2:
Caught in the Middle
of a Maelstrom**

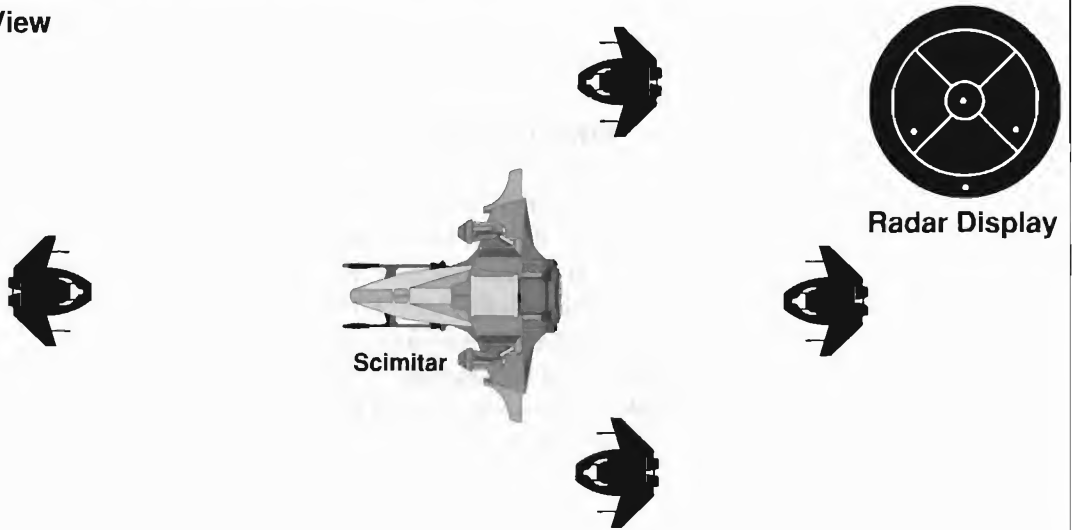
Nothing is more frenzied than a dogfight in the middle of an escort mission. With your wingman, the ship you're escorting, and multiple enemy fighters on-screen, you can quickly develop a case of vertigo. If you can't take in all the information in this diagram in two seconds, you'll probably collide with someone or hear the eject warning real soon.



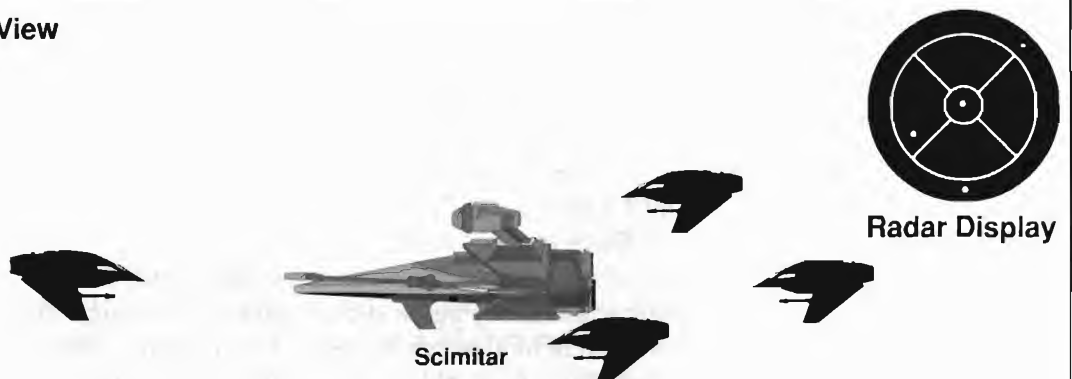
Kilrathi pilots smell your blind spots and vulnerabilities. Then they go for your throat. When you're concentrating so hard on your target that it's tough to scan all the cockpit displays, just take a quick glance at your radar and look for the following positions. If the blip is red, it's time to kick in the afterburners and try some slippin', slidin', and rotatin'!

**Radar Screen 3:
The Most Threatening
Enemy Positions**

Top View



Side View



Strategy and Tactics in Space Flight Combat

While I thought I could fly after the first semester, I wasn't naive. I knew that pilots who survived combat missions were more than just ion jockeys with good reflexes. That's who I wanted to learn strategy and tactics from, and that's why I couldn't believe it when I found out that the instructor for the course would be Lt. Colonel Raymond Blakely, the savior of Enyo. Fifteen years ago, he had designed and implemented the mine and jump point strategy that saved a quarter-million human hostages from Kilrathi orbital guns.

Without looking carefully, I rushed up behind the first person I saw and tapped his shoulder. "Can you believe it?" I said. "Lieutenant Colonel Blakely is teaching Section 04 and I'm in it. He's been my hero since I was nine years old."

Marshall turned around. The smirk said he didn't share my view of the most honored hero in TCSN history.

"How can you get so worked up by some old greyser who hasn't flown a mission since 2643?" Marshall said disgustedly. "This guy's ancient history in my book. He'll teach a bunch of by-the-book maneuvers that the Kilrathi have seen since their first dogfight with a human. That's not what we need. I'm looking for new ideas, not a bunch of 'when I was young' ramblings from an old man."

Well, that's the end of my academy career, I thought. This guy didn't deserve to be a plebe. He was maligning one of the greatest men to ever graduate from the academy. I was stepping into position to throw a left hook and give Todd a little chin music, when I heard the footsteps behind me. It was Midshipman Third Class Mariko. "Looks like you two are going to be late for class," she snapped. That's all she had to say, but before I took off for Labri Hall, I turned to Marshall and whispered, "That's one I won't forget."

Blakely's class was the toughest in the first-year curriculum, but I didn't care. In hindsight, it would turn out to be the greatest instruction in my years at the academy. He taught me to have a purpose behind every maneuver and a target within range for every shot. He taught me to be a flight leader and a wingman. He taught me when to be cautious, when to be aggressive, and when to turn and run. It would take another book to outline all that Blakely knew, but on the following pages are what I found to be his most valuable lessons. On more than one occasion in the Galactic War, I felt I owed him my survival.

It's been obvious from news and military reports that TCSN fighter pilots are greatly outnumbered by their Kilrathi counterparts. Luckily, the Terran pilots' skill and their access to more advanced technology help even out the odds. The fact remains, however, that you will stare into the gun ports of more enemy ships than a Kilrathi pilot will. You'd better be ready.

When a wing of flying cats turns to attack as a group, they present a lethal array of firepower. If they're Jalthi, each ship carrying three neutron guns and three laser cannons, they are the most devastating offensive force in the arena.

Kilrathi pilots don't get cute in their initial blitzkrieg of a wingleader. Instead, it's a straight-on wave of gunfire and missiles, with each ship slightly behind and to one side of the leader. It's intimidating as hell.

Rookie pilots often try to slug it out the first time they discover a group of cat-carriers heading straight at them. The adrenaline is pumping, the pulse is racing, and who knows what other reactions the brain is stimulating. It's known as "Furball Fever," and it has cost the Confederation more first-mission casualties than any other form of pilot error. Be patient, and take evasive action until you can gain a tactical advantage.

Even veteran combat pilots must fight the impulse to just cut loose with the guns when enemy targets appear in the viewscreen. Among students flying in the simulator and rookies on early missions, it's almost compulsive behavior. It's also one of the least effective tactics in combat.

The power of the laser, mass driver, and neutron guns on TCSN fighters is generated by blaster generators. Every time you fire, stored blaster power decreases, with the amount dependent upon the type of gun. As power decreases, the power of a shot is weakened. If you deplete blaster power, your guns aren't functional until the storage capacitors have regenerated.

The current thinking among combat analysts suggests that pilots who make a serious effort to keep blaster power at a maximum are the most successful. They sneak in close to enemy targets and fire three- or four-round bursts at full power, never wasting shots when enemy ships are out of range. They spend hours in the Train-Sim, learning to anticipate enemy maneuvers and practicing the amount you must lead an enemy ship from varied distances, angles, and speeds. Practice!

Avoid the Initial Wave of Enemy Fighters

Employ Disciplined Firing Methods

Use Speed Changes in Your Evasive Maneuvers

Too many pilots rely on rolls, spins, loops, and turns when trying to escape an attacker, without considering speed changes in concert with these aerobatics. No matter how polished your twisting evasive maneuver might be, Kilrathi pilots can match your moves if you maintain a constant speed. Eventually, they'll roll in behind you and open up on your rear shields.

Slamming on the afterburners in the middle of a spin or roll shifts the odds of escape in your favor. Now you're adding an element they can't anticipate. Recent studies have shown that a dramatic decrease in speed is just as effective, and the backspace key on all computer keyboards in TCSN fighters has been reprogrammed to allow such a move. The exact effect varies depending upon the ship you fly, but hitting the backspace key is like standing on the brakes in a ground vehicle. It automatically sets your KPS to zero. Be careful, though. If you forget to immediately increase speed, you're a sitting duck.

Give Your Missiles a Chance to Strike

When Lt. Colonel Blakely spoke of his own experiences in combat, the focus often shifted to a single dogfight. He told us of taking on the Kilrathi Ace Dakhath in a pitched battle that lasted more than 60 minutes. An astounding length of time, since most dogfights last less than five!

"You have to realize that Dakhath was younger and less experienced when I ran into him," said Blakely, "but he was already an ace with nine confirmed kills. I was so scared that the joystick almost jumped out of my hand. It was just Dakhath and me.

"We went round and round for about 40 minutes, each just feeling the other out and evaluating the performance of the other's fighter. Finally, Dakhath made a mistake, and I found myself right on his tail. I couldn't miss. The Javelin tracking system locked on to his engines and I quickly launched the heat-seeking missile."

"Now I'll deliver the *coup de grace*. I flipped back the fire cover and started thumbing the fire button for the lasers. I figured two weapons were better than one. I saw the missile swing into position, and just then I realized my mistake. The missile exploded when my laser fire caught up with it. Dakhath escaped from the explosion and fled. I couldn't catch up with him. I've never made that mistake again," Blakely said to the class, "but one of you probably will. I hope it doesn't cost you."

Few tools in the cockpit offer as much flexibility as the afterburners in both offensive and defensive scenarios. The best pilots, and even the playtesters of the Roberts-designed holo-vid, *always* keep a finger on the afterburner fire key.

Lighting the afterburners on a confederation ship rapidly burns through your fuel reserves. Using short bursts, instead of sustained burns, typically offers the same tactical advantages but reduces fuel consumption.

Afterburners don't always help. Anxious pilots sometimes hit the afterburners as soon as they decide to attack an enemy wing. It's like they can't wait to start the fight or see how it ends. When you rush into battle, you're eliminating a strategic advantage. At slower speeds, and before an enemy wing is in range for auto-targeting, it's easier to determine the direction traveled by the enemy. How can you identify a strategy if you don't know which way they're heading?

If you can make them take the battle personally, Kilrathi pilots often lose sight of their primary objective. When trying to protect a capital ship from an attacking force, target the enemy and taunt them with as personal an affront as you can muster. It's probably the younger ones who can't ignore it, and about 50 percent of the time they'll turn from the target to attack the pilot who insulted them. This is also a good tactic to protect a beleaguered wingman.

When your palms drip from the constant tension in a one-on-one confrontation, you can concentrate so hard on your target that you lose track of the ship you're escorting. Realizing that tendency, veteran Kilrathi pilots intentionally try to draw you into a dogfight and lead you away. They leave the dirty work of destroying the main target to the rest of the wing.

Escorting pilots must make a conscious effort to stay within 5000 kilometers of the ship they are protecting. If you venture farther, it's unlikely you'll be able to return in time to stop the destruction of the TCSN capital ship.

As wingleader, ordering a wingman to "break and attack" instead of "attack my target" helps ensure protection while you chase a retreating enemy. It's not a fail-safe measure, since your wingman might chase a decoy at the same time, but at least you're not ordering your wingman to follow your lead.

Stay Ready to Use Your Afterburners

Taunt the Enemy

Don't Leave TCSN Capital Ships Unprotected

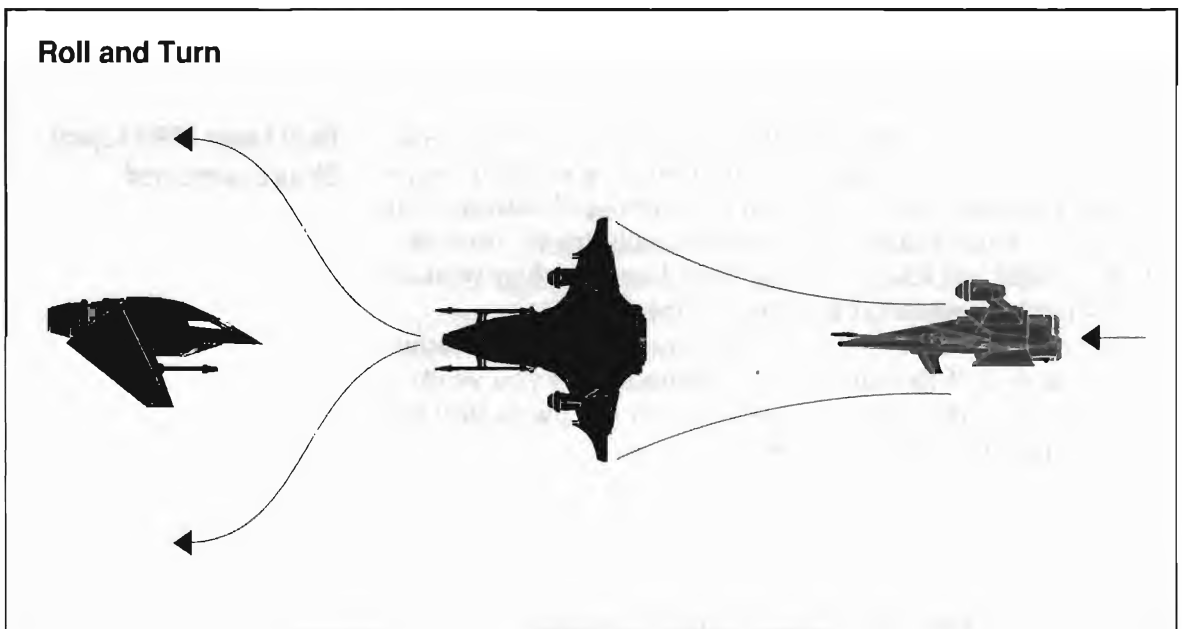
For Tighter Up or Down Movements, Roll and Turn

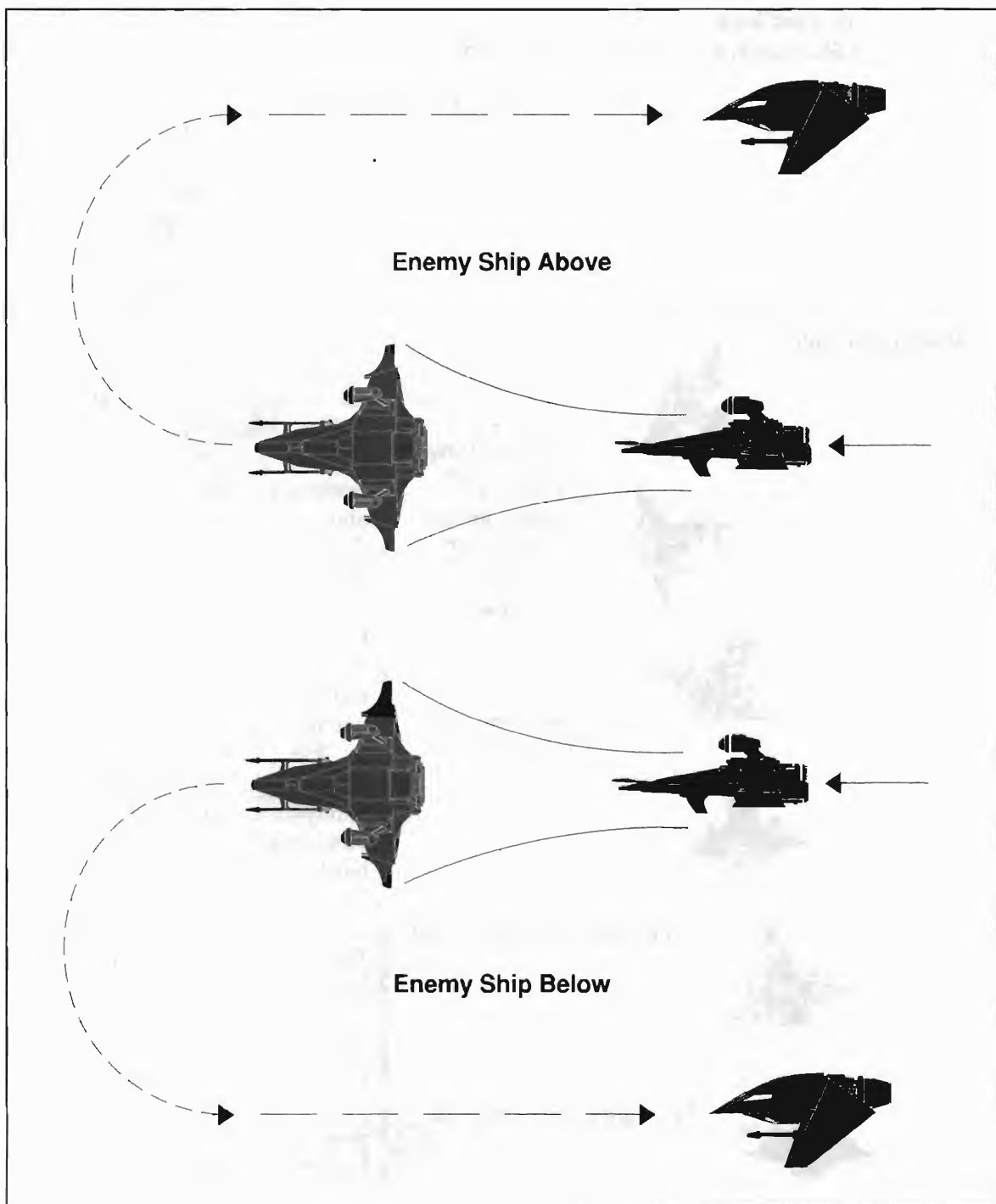
The arrangement of thrusters on Hornets, Scimitars, and Raptors produces an unusual flight characteristic: up and down movements cannot be completed in as tight a radius as a turn to the left or right. Aerospace engineers are trying to correct the flaw in the new Rapier class, but it is still unknown whether their efforts have been successful.

The effect isn't pronounced, but pilots have recently started employing a roll-and-turn maneuver instead of just pulling or pushing the stick to move up and down. The end result is the same. You end up turning toward the same location. But this movement is faster and more difficult for enemy pilots to track.

The diagram below shows the basic movement and the decreased radius of the roll and turn compared with a simple nose-down or nose-up. The two diagrams on the adjacent page show how the maneuver can be employed against enemy targets that are above or below your position.

Once you've decided to make the move, don't forget to combine it with speed changes for optimal results. Hitting the afterburners during the turn adds that extra element of surprise. Above all, practice the tactic until you can accomplish the two movements without thinking. Then experiment in the Train-Sim with speed changes in different parts of the turn.





Turn and Slide Using Afterburners

If you punch up the afterburners and turn hard to the left or right, your ship begins to slide. The movement is transparent from the cockpit, but understanding it is the foundation of the most effective tactic in space combat.

The integrated gun targeting and firing schemes on Kilrathi ships allow them to consistently hit one of our ships moving in almost any kind of simple turn, roll, or spin at normal speeds. Speed changes are an effective defense, but hardly foolproof. When one of our ships is sliding, however, the movement is not translated perfectly by the Kilrathi's computer systems. The slide

is an outstanding defensive tactic. It can also be an offensive weapon.

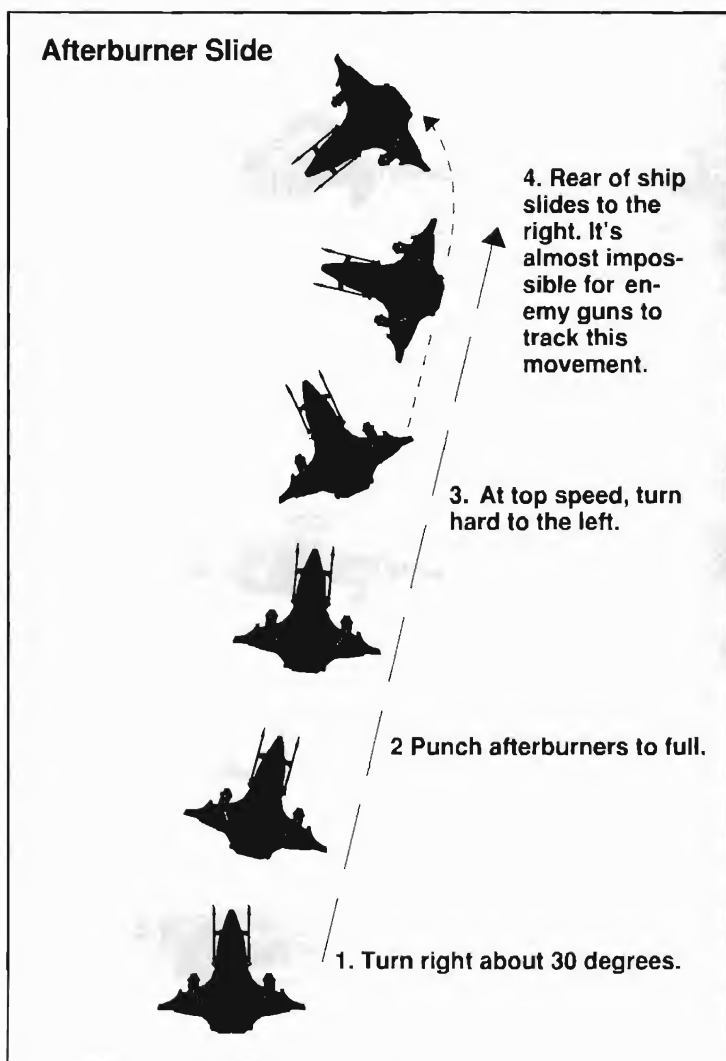
When a wing of Kilrathi approaches directly from the front, you can use the slide to avoid their fire and put yourself in a perfect position for a side attack on the lead and following ships (see adjacent diagram). The following procedure details the steps:

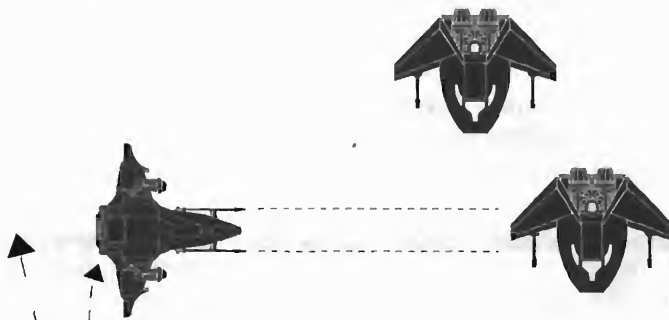
1. With the enemy at 3500 meters and approaching from dead ahead of you, begin a turn to the right. Take care to avoid any diagonal movement.

2. At about a 30-degree angle, or when the enemy ships are just barely visible on the left side of the viewscreen, punch the afterburners hard. Get to top speed.

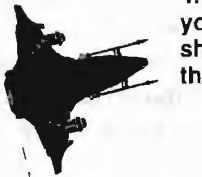
3. Turn the ship directly to the left (avoid any elevation changes). The rear end of your ship begins to slide.

4. If your timing is correct, you quickly slide into the perfect position for a side attack with your guns. You're close, the enemy is powerless and vulnerable, and blaster power is full. What could be better than that?





4. At a range of 1000-1500 meters, the nose of your ship should be aiming at the lead enemy ship. Thumb the fire button for maximum effect, then turn and follow the enemy wing.



3. At a range of about 2000 meters, turn hard to the right. Make sure you don't change elevation during the turn.



2. Straighten out and immediately punch your afterburners hard, making sure you achieve maximum velocity.



1. At a range of 3000-3500 meters from your target, turn left about 30 degrees.



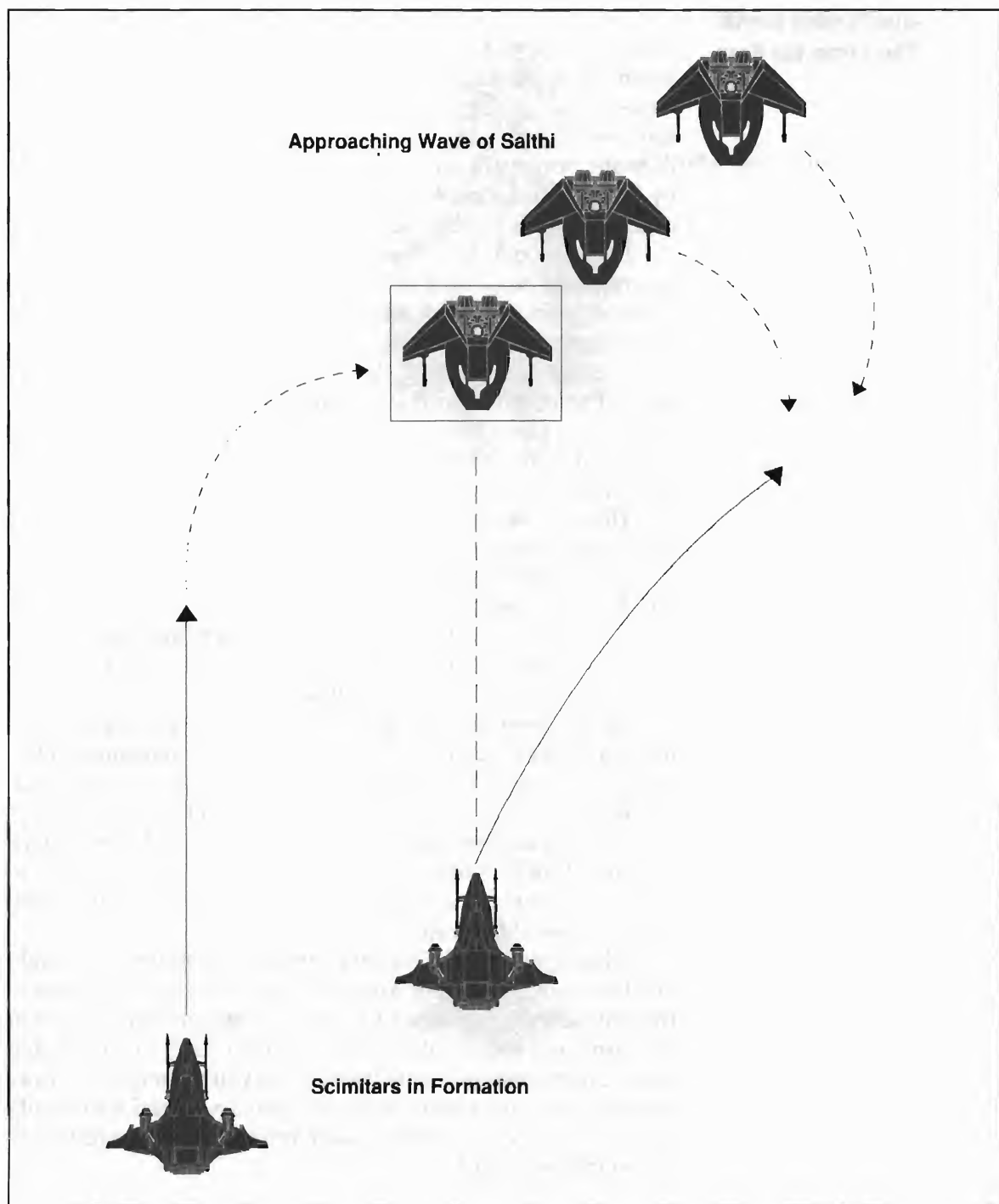
**Use Target Lock to
Direct the Fight**

Author's Note: The following tip really has nothing to do with what I learned at the academy or during the war. I discovered it while I was working as a consultant on the new *Wing Commander* holo-vid and thought I should include it for the benefit of the game players who purchased this book. After all, I'm old, retired, and tolerated, and I can try whatever I want.

Due to memory and storage considerations, Roberts had to limit the communications options in his game. You can order your wingman to do a lot of things, but you can't tell him to hit a specific target while you go after another. Or can you?

This method is limited in scope, but it is possible to use your targeting system to direct your wingman to attack a specific enemy plane — and it leaves you free to direct your guns against a different enemy ship. The procedure really comes in handy when you want to finish off a target you've already weakened, but you have to break and go after another ship that's pounding your shields. Here's the procedure:

1. Before you break your attack, press the "L" key to lock in your target. The bracket indicating a targeted enemy becomes solid. No matter which direction you fly, the locked target remains identified by the computer.
2. Tell your wingman to "attack my target." Now he will go after the locked target until it's destroyed, you change your target, or you transmit another order. With just a few well-aimed shots, your wingman can finish off the target.
3. You are free to pursue other enemy ships with your guns or dumb-fire missiles. Spiculum IRs and Javelins need a lock, and therefore a bracketed enemy target, but your guns and dumb-fires are effective at close range against any ship you can place between the crosshairs.
4. To ensure the success of this tactic, don't forget that you must leave the original target locked. If you press the "T" key and select another enemy, your wingman will break and attack the new target.



Attack Enemy Capital Ships from the Rear

Highly maneuverable turreted lasers are the primary defense on Kilrathi capital ships. Hundreds of Terran pilots have fallen when the sophisticated targeting system that directs the guns locked onto their signature. Porcupine mines are also found on some of the destroyers, cruisers, dreadnaughts, and carriers, but they are more a nuisance than a real threat. Since the first attack by Confederation pilots on these massive enemy ships in 2634, controversy has surrounded the best tactic for taking them out.

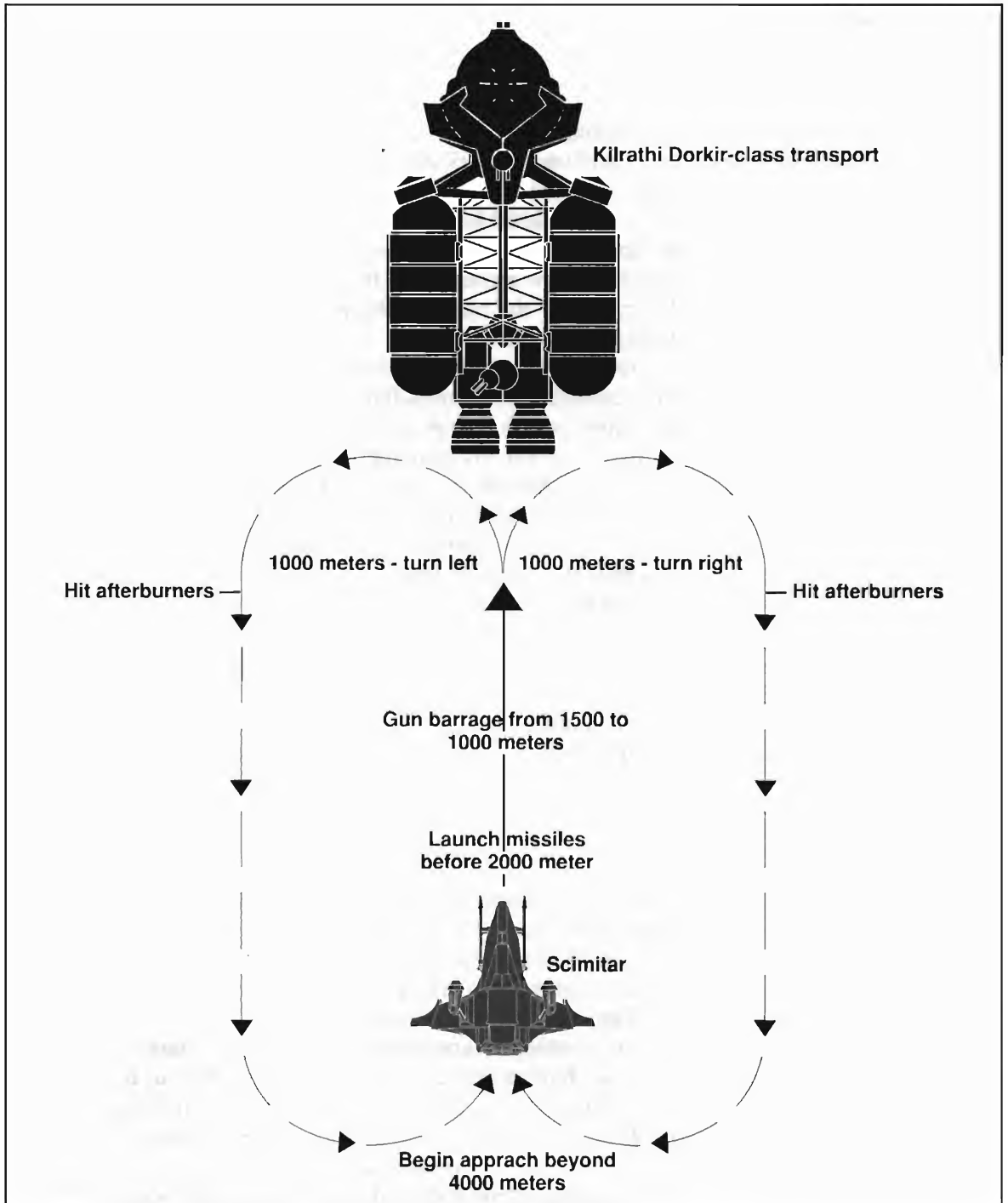
The one point that every pilot agrees on is that the fighter escorts must be eliminated first. It's hard enough to dodge the turreted lasers from the capital ship, much less do that while also eluding the guns and missiles of nimble fighters.

The first successful attacks on capital ships targeted the right and left sides. While armor is more substantial on the sides than in the rear, pilots didn't have to break through shields before causing damage. Most pilots weakened the armor with gunfire, then launched Spiculum IR and dumb-fire missiles to finish the job. The tactic was successful, but casualty rates were unacceptably high among Terran pilots from the laser defenses.

The current thinking among combat analysts is that a rear attack is preferable. While you'll have to dodge an occasional Porcupine, you won't run into as much laser fire from the rear. You must break through the rear shields, but the weakness of the rear armor makes it worth the effort.

The diagram on the adjacent page shows the route and timing of a highly effective rear attack. Begin your maximum-velocity rear approach from long range, beyond 4000 meters, and make sure you have full blaster power. If you have any missiles left, you can launch them from between 3000 and 2000 meters. Watch out for Porcupines and lasers as you approach, and cut loose with your heaviest gun starting at a distance of 1500 meters from the rear of the ship.

When you reach 1000 meters, break hard to the left or right and hit your afterburners. You should be traveling straight away from the rear of your target. Circle back with another hard left or right turn and you should be aiming at the rear of the capital ship again. Since you fired your afterburners, you're far enough away that you don't risk a collision during a hard turn, and have plenty of time to regenerate blaster power and shields before resuming the attack. Be patient.



Simulated Dogfights

I'll never forget stepping into the Hornet simulator for my first dogfight. All the hours of studying texts and holo-vids, and discussing theory and tactics, were going to pay off. The days spent practicing launches, landings, and other flight drills would be put to the test. During the first semester, we were just learning to fly and use the sophisticated electronics; now we would fight, and discover whether we had the instincts of a combat pilot.

The academy had designated the final two months of the second semester to concentrate on weeding out the weak from the strong, the incompetent from the skilled. They needed combat pilots for the war, and they needed them fast. The process took place in the simulator.

Our first dogfights featured computer Kilrathi opponents. We spent almost a month fighting these electronic enemies. Flying Hornets, we first encountered small wings of two or three Dralhti or Salthi. The sim operators gradually increased the skill level of the Kilrathi and the number of enemy ships. Then they would throw in new types of ships until we had battled pilots in Krant, Gratha and Jalhti. During the progression of opponents, our own ships were upgraded to Scimitars and Raptors.

At the end of each day, we retired to our rooms and waited for the results. It was the most nerve-wracking period in the first year, since a call from the battalion commander meant you had washed out of the academy and your dreams of becoming a combat pilot were history.

If you made the first cut, as I obviously did, you spent the final month in a single-elimination tournament in the simulator, dogfighting against your own classmates. The top 200 would continue their training as fighter pilots, while the remaining plebes were relegated to flying transports or worse. The winner of the tournament received "bragging rights" and a choice of assignments and schedules for the second year. It also never hurt to have the honor in your record when promotion time came around. I was going after it.

I waltzed through my first few battles in the competition, but all the scuttlebutt concerned Midshipman Marshall. I hadn't watched him in action, so I wasn't sure what all the fuss was about. Apparently, however, Marshall was dusting his opponents in record time and using some unorthodox tactics to do it.

My roommate, Midshipman Michael Anthony, was one of the casualties. "He doesn't do anything by the book," Anthony

noted. "I was in perfect position, right behind and to one side of Marshall, and ready to throw the mass drivers up his tubes. He hit his afterburners and I followed. Then it looked like he put on the brakes, 'cause I flew right by him. He just rotated, fired a volley, and I was done. The whole fight only lasted a minute. He set me up and I took the hook."

As you've probably guessed by now, Marshall and I were opponents in the finals. I was thinking of what he had said about Lt. Colonel Blakely when I came up with a scheme to get back at him. Non-violently of course.

First, you have to understand the setup. For the dogfight tourney, each pilot flew from a separate simulator cockpit. Each simulator was assigned a plebe who helped the pilot get dressed, harnessed, and helmeted. With cameras and microphones in each cockpit transmitting to an outside theatre, the tourney was as much a spectator event as a competitive contest. The sim operators could also open a microphone and transmit instructions into the cockpit from the theatre. Everyone would be watching the final dogfight. It was the perfect setup.

You also have to understand Marshall. He wasn't the type of guy who responded positively to embarrassment. He just didn't really have the self assurance that he tried so hard to display when he met people.

Anthony and I had set the stage when we filled a spare helmet with a mixture of manure, grease, oil and whipped cream. Anthony made sure the helmet was in the cockpit, but out of sight, just minutes before Marshall arrived for the final match.

I stayed in the packed theatre area while Marshall arrived and climbed into the simulator cockpit. I made sure the microphone was open so that Marshall would be able to hear the reaction of the crowd.

Anthony helped Marshall into his suit and harness and began hooking up all the electronics that monitored the pilots' reactions during combat. It took a few minutes, and the whole time Marshall was pumping himself up for the final dogfight.

"This is going to be the shortest tourney final in academy history," Marshall boasted. "LaFong doesn't stand a chance. I'm going to take him out slow and make sure he understands who the best pilot really is. In fact, I'll fly circles around him and make sure *everybody* realizes what a wimp he is. Get my helmet on, Anthony, and we'll get this show on the road."

Earning Nicknames

Anthony was more than happy to oblige. The pilot was checking the gauges when Anthony placed the helmet over his head and the smelly, gooey mixture started squirting out around Marshall's neck.

Everyone in the theatre started howling, and Marshall could hear every guffaw in the cockpit. I was rolling on the floor.

He ripped the helmet from his head to reveal a face that was even redder than his hair. He was covered with slop. Marshall was trying to find his assistant, but Anthony had bolted away.

I grabbed the microphone, knowing he recognized my voice. "Good morning, Midshipman Marshall," I crooned. "It looks like you'll need a few minutes before we can start our match. I just wanted to be sure you knew who had delivered the first annual 'Official Badge of False Bravado.' You earned it."

Well Marshall cut loose with some of the foulest language imaginable. He just couldn't stand the fact that I had embarrassed him in front of his peers. I stalked out of the theatre and headed for my simulator cockpit to get ready for the action.

I must have really ticked him off, because Marshall was like a wild man when our dogfight started. On his first pass, he didn't even fire a shot, instead just hitting the afterburners and trying to ram me. I couldn't believe it. This was only simulated, but the first thing a pilot must think about is his own survival. That apparently didn't matter to Marshall.

I was sweating bullets. I didn't like Marshall, but he sure could handle a joystick. It seemed like he'd been born in the cockpit seat, the way he made the Scimitar dance around in space. I thought his anger at my prank would be to my advantage. It wasn't. I was spending so much time dodging his attempts to ram me that I couldn't concentrate on my own strategy.

"This maniac is going to destroy both of us," I screamed. He didn't, but he took out my ship with the most precise flying and shooting I had ever encountered. Even the computerized Kilrathi opponents at Ace skill level couldn't have touched him.

Marshall won the bragging rights, but still hadn't done anything to endear himself to anyone in the class. He wouldn't shake hands after the match, and ignored the plebes who tried to congratulate him on his victory.

Thinking it would bother him, the plebes started calling him Maniac. It didn't even faze him. In fact, it fit right in with the image he was trying to develop. They named me Prankster.

End of Year One

Not all our final examinations were as enjoyable as the dogfight tournament. In history, engineering and physics, the finals were about as much fun as walking barefoot across a bed of hot coals. I can't count the hours I spent in the library, in study groups, and at the computer keyboard. For luck, I even tossed some pennies in the space academy's replica of Tecumseh Fountain, a tradition started hundreds of years ago at the Naval Academy in Annapolis, Maryland.

Maniac might have defeated me in the simulator, but I came out on top when the final grades were posted for the 4th-class midshipmen. He didn't really take the rest of his courses very seriously, thinking his natural smarts would allow him to get by. He got by all right, but just by the skin of his teeth, and I couldn't resist throwing a barb his way when I saw him walking toward the board where the score sheets were posted. There was a good crowd around too. That helped.

"Hey, look, everybody," I said loud enough for Maniac to hear. "Here comes the guy from Leto who said he would graduate at the top of our class. Let's check his standing." Of course I already knew that there were only three plebes below him.

He marched up to the board, checked his ranking, and turned and stared right at me. "Paper grades are great for show, Prankster, but fighting and flying is where you earn your dough."

"Touché" I said to myself.

Tecumseh Fountain wasn't the only tradition we stole from what we called the "Water Navy." In Annapolis, at the end of each year, the plebe class must remove a Dixie cup (the hats worn by 4th-class midshipmen) from the top of Herndon Monument. Removal informally signals the end of plebe year. What makes it difficult is the mixture of grease, manure, and paint that's been spread on the statue. It takes hours for the plebes to slip, slide, and finally form a pyramid until one can climb to the top and remove the symbol. Legend has it that the individual who removes the cap will eventually become admiral of the fleet.

At the TCSN academy, we have a statue of Admiral James Halworthy, the founder of the academy. I spent so much time making sure Maniac wasn't the one to reach the top, and vice versa, that a diminutive plebe from the 2nd Battalion, Tanya Benbow, shimmied to the 45-foot statue's peak and captured the hat. We weren't youngsters any more and were no longer subject to the whims of upperclassmen. What a relief!

Sailing Through the Academy

What a difference a year makes! After just one summer of sun and fun, I could hardly remember how terrifying my first day at the academy had been. At the same time, I couldn't forget how much I resented some of the inane gyrations the upperclassmen had put us through during our first year. I refused to repeat the actions of those who had preceded me at the academy. I may have been the only one who did.

It was amazing to me how some of the most introverted individuals from my plebe class had all of a sudden become brazen, obnoxious upperclassmen. They were constantly searching for scuffed shoes, dirty belt buckles, improper haircuts and unmade beds — anything they could use to dress down a plebe. They pulled white-glove inspections, always keeping a dirty glove in their pocket, just so they could watch the 4th-class students squirm, or make them perform 100 pushups. They loved it.

I think this was my way of rebelling against the system. I always made sure that a plebe realized I was just playing a game and didn't take hazing seriously. I'd find a single hair out of place and make a youngster give me one situp. I'd pull someone who had missed a marching step out of formation, and instead of making them march for three more hours like my classmates would, I'd give them a 10-minute break. The plebes liked my attitude; the rest of my class thought I was making a mockery of the system. I really didn't care what they thought. For the first time at the academy, I was having some fun. The fun didn't last, but things sure got interesting.

The Academy Changes

The second year is kind of a blur. When the war heated up and the Confederation became increasingly desperate for qualified pilots, emergency legislation was passed to create an accelerated program at the academy. Starting with our class, summer leave no longer existed. Students left the academy after two years to spend a year in on-the-job training on a TCSN ship. Then they were sent to permanent assignments, usually on the front lines.

With the change in our status, there wasn't time for fun and games. Other than intramural sports, the academy was all business, and the business was cranking out people who could get the job done. I can't begin to estimate the time we spent in simulators, computer labs, the library and the classroom. And now everything we learned was specifically related to the war.

While instructors had always integrated the war into our courses, in the new program we pored over the dynamics of every battle, debated each engagement's strategy and tactics, and studied the Kilrathi's ships, weapons and pilots. It was what I'd envisioned when I first applied for appointment to the academy. It was what I'd come to learn.

As we dissected recent successes in the Kilrathi war, I noticed that the name of the TCS *Tiger's Claw* kept appearing. Everyone at the academy had heard in history class the story of the *Claw's* shakedown cruise in 2644 when they unexpectedly encountered and routed a superior Kilrathi invasion force. More recently, the Confederation's largest carrier had fought an unbelievable delaying action known as Custer's Carnival. It set up the escape from Kilrathi space of 10 Confederation Draymans carrying more than 2000 ground troops.

Ultimately, the *Tiger's Claw* was where I, and most other pilots, wanted to serve. It was the assignment of choice, not only because of the success it had achieved in the war, but also because of the personnel on the carrier. Colonel Halcyon was known throughout the fleet as a leader who always supported the decisions his pilots had to make in combat. Pilots like Captain James Khumalo, Major James Taggart, Captain Jeannette Devereaux, and Major Michael Casey carried reputations as the most professional and effective pilots in the war. Why would a young pilot want to serve anywhere else?

The Tiger's Claw – Assignment of Choice

TCS Tiger's Claw



Kilrathi Ship Tactics

It was vital that new pilots understand the strategy and tactics used by the enemy. As Terran Intelligence received information from mission data, they used computer analysis to determine a profile based on ship type. Those profiles were our main resource in developing our own strategy.

The information we received at the academy on each enemy fighter type was based on the state of the engagement and the amount of damage already incurred by that ship. For example, for each Kilrathi ship the tactics were based on nine categories that indicated the state of the confrontation:

1. Enemy Near — our fighter(s) were close by.
2. Enemy Slow — our fighter(s) were moving slowly.
3. Enemy Far — our fighter(s) were in the distance.
4. Enemy Tailing — our fighter(s) were close behind.
5. Head-to-Head — our fighter(s) approached head on.
6. On Enemy Tail — close and behind one of our fighters.
7. Missile Coming — one of our missiles approaches.
8. Laser Hit — fighter hit by our laser/gun fire.
9. Enemy Destroyed — ship destroyed one of our fighters.

Terran Intelligence also determined that different tactics were used based on the amount of damage that the enemy ship had already taken. For example, an enemy ship might attempt a different tactic when heavily damaged than before taking any damage. So for each of the situations listed above, Intelligence provided tactics employed when:

1. The Kilrathi fighter had taken little or no damage.
2. The Kilrathi fighter had taken medium damage.
3. The Kilrathi fighter was almost destroyed.

Unfortunately, computer analysis wasn't an exact science and the profiles couldn't tell us what an enemy ship would *always* do in a specific situation. Instead, they provided percentages that told us how likely it was that a specific tactic would be employed. The percentages were provided for each of the nine categories and each of the three states of damage. For example, the profile would tell us that in a missile-coming situation when the Kilrathi fighter had taken no damage, the fighter would try a fish-hook maneuver 60 percent of the time and a tight loop 40 percent of the time. On the following pages are the profiles for each fighter type in the Kilrathi fleet.

Enemy Near

No Damage — 70% try to tail; 30% random offense
Medium Damage — 80% try to tail; 20% random offense
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 80% strafe attack; 20% get distance
Medium Damage — 50% strafe attack; 50% try to tail
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 90% break left; 10% random defense
Medium Damage — 90% break left; 10% random defense
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 50% random defense; 50% random offense
Medium Damage — 80% random defense; 20% rand. of-
fense
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% random offense
Medium Damage — 100% random offense
Almost Destroyed — 100% random offense

Missile Coming

No Damage — 100% random defense
Medium Damage — 20% break left; 80% random defense
Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 100% random defense
Medium Damage — 25% break left; 75% random defense
Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% veer away
Medium Damage — 100% veer away
Almost Destroyed — 100% veer away

Salthi Light Fighter



Dralthi Medium Fighter



Enemy Near

No Damage — 40% try to tail; 60% random offense

Medium Damage — 70% try to tail; 30% random offense

Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 80% strafe attack; 20% get distance

Medium Damage — 50% strafe attack; 50% best strafe

Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter

Medium Damage — 100% intercept enemy fighter

Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 50% tight loop; 50% random defense

Medium Damage — 50% toll over; 50% random defense

Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 70% random offense; 30% rand. defense

Medium Damage — 60% rand. offense; 40% rand. defense

Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% random offense

Medium Damage — 100% random offense

Almost Destroyed — 100% random offense

Missile Coming

No Damage — 100% random defense

Medium Damage — 100% random defense

Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 50% corkscrew; 50% random defense

Medium Damage — 100% random defense

Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% veer away

Medium Damage — 100% veer away

Almost Destroyed — 100% veer away

Enemy Near

No Damage — 80% try to tail; 20% strafe

Medium Damage — 80% try to tail; 20% strafe

Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 80% strafe attack; 20% get distance

Medium Damage — 50% strafe attack; 50% try to tail

Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter

Medium Damage — 100% intercept enemy fighter

Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 60% random defense; 40% rand. offense

Medium Damage — 60% rand. defense; 40% rand. offense

Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 30% zip past; 70% random offense

Medium Damage — 30% zip past; 70% random offense

Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% strafe enemy

Medium Damage — 100% random offense

Almost Destroyed — 100% random offense

Missile Coming

No Damage — 100% random defense

Medium Damage — 100% random defense

Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 50% strafe enemy; 50% random defense

Medium Damage — 100% random defense

Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% veer away

Medium Damage — 100% veer away

Almost Destroyed — 100% veer away

Krant Medium Fighter



Gratha Heavy Fighter



Enemy Near

No Damage — 50% try to tail; 50% strafe enemy
Medium Damage — 50% try to tail; 50% strafe enemy
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 100% sit and fire
Medium Damage — 100% sit and fire
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% intercept enemy fighter

Enemy Tailing

No Damage — 30% burnout; 70% strafe attack
Medium Damage — 98% random defense; 2% drop mine
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 90% strafe attack; 10% strafe and roll
Medium Damage — 100% strafe enemy
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% random offense
Medium Damage — 100% random offense
Almost Destroyed — 100% random offense

Missile Coming

No Damage — 100% random defense
Medium Damage — 100% random defense
Almost Destroyed — 100% random defense

Laser Hit

No Damage — 50% turn and fire; 50% random defense
Medium Damage — 100% random defense
Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% veer away
Medium Damage — 100% veer away
Almost Destroyed — 100% veer away

Enemy Near

No Damage — 40% try to tail; 60% strafe attack
Medium Damage — 40% try to tail; 60% strafe attack
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 100% sit and fire
Medium Damage — 100% sit and fire
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% intercept enemy fighter

Enemy Tailing

No Damage — 90% random defense; 10% turn and fire
Medium Damage — 90% random defense; 10% burnout
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 100% strafe attack
Medium Damage — 100% strafe attack
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% random offense
Medium Damage — 100% random offense
Almost Destroyed — 100% random offense

Missile Coming

No Damage — 100% random defense
Medium Damage — 100% random defense
Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 10% turn and spin; 90% random defense
Medium Damage — 100% random defense
Almost Destroyed — 100% random defense

Enemy Destroyed

No Damage — 100% veer away
Medium Damage — 100% veer away
Almost Destroyed — 100% veer away

Jalhti Heavy Fighter



Know the Kilrathi Pilots

As the war progressed, pilots on the *Tiger's Claw* and other Bengal-class carriers identified individual Kilrathi pilots through repeated contacts. These enemy pilots were the cream of the crop, the aces who inflicted the greatest damage on the Confederation fleet. Terran Intelligence requested that our pilots begin reporting on the tactics employed by the enemy aces. As the amount of information grew, they were able to provide profiles of these pilots similar to the ones generated on the Kilrathi ships to the students at the academy. In all cases, the tactics employed by the aces differed from those of other enemy pilots who flew the same types of ships.

Bhurak Starkiller, flying a Salthi-class light fighter, carried a reputation as the finest pilot in the Kilrathi space navy although the number of confirmed kills he claimed was unknown. He was an unusual character who seemed to consider dogfights a pleasurable pastime. When the fighting ceased to be fun, he would often run and hide.

Dakhath, flying a Dralthi-class medium fighter, had recorded 55 confirmed kills before the Vega Campaign even started. He was the most ruthless of the enemy pilots and wouldn't break off from an engagement while any Terran ships were still able to fly. Similarly, he wouldn't break his attack on a specific Terran ship until it was destroyed.

Khajja the Fang, flying a Krant-class medium fighter, was known as the most single-minded of the enemy aces. He wouldn't respond to taunts, and always went right after the mission objective, often ignoring fighter escorts.

Bakhtosh Redclaw, flying a Jalthi-class heavy fighter, considered himself to be the best Kilrathi pilot, although we placed him at the bottom of the list. His greatest strength was his accuracy with the Jalthi's six-guns, but his flying skills left a lot to be desired. He responded to taunts and hated being called cat-face.

Enemy Near

No Damage — 60% try to tail; 40% strafe attack
Medium Damage — 60% try to tail; 40% strafe attack
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 80% strafe attack; 20% get distance
Medium Damage — 50% strafe attack; 50% try to tail
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 50% fish hook; 50% corkscrew
Medium Damage — 75% kick and stop; 25% turn and kick
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 60% zip past; 40% strafe and roll
Medium Damage — 60% zip past; 40% strafe and roll
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% tail fire
Medium Damage — 100% tail fire
Almost Destroyed — 100% tail fire

Missile Coming

No Damage — 50% kill missile; 50% turn and kick
Medium Damage — 50% kill missile; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 50% kick; 50% turn and kick
Medium Damage — 50% hard brake; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% gloat
Medium Damage — 100% veer away
Almost Destroyed — 100% veer away



Bhurak Starkiller



Dakhath

Enemy Near

No Damage — 50% try to tail; 50% strafe and roll
Medium Damage — 70% try to tail; 30% strafe and roll
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 80% strafe attack; 20% get distance
Medium Damage — 50% strafe attack; 50% try to tail
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 97% burnout; 3% drop a mine
Medium Damage — 95% turn and kick; 5% drop a mine
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 40% zip past; 60% strafe and roll
Medium Damage — 20% zip past; 80% strafe and roll
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 50% tail fire; 50% strafe and roll
Medium Damage — 100% strafe and roll
Almost Destroyed — 100% tail fire

Missile Coming

No Damage — 50% fish hook; 50% turn and kick
Medium Damage — 50% kick ; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 100% turn and kick, then turn and fire
Medium Damage — 50% burnout; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% gloat
Medium Damage — 100% gloat
Almost Destroyed — 100% veer away

Enemy Near

No Damage — 70% try to tail; 30% strafe attack
Medium Damage — 70% fish hook; 30% strafe attack
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 100% sit and fire
Medium Damage — 100% sit and fire
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 50% break right; 50% turn and kick
Medium Damage — 75% burnout; 25% break left
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 30% zip past; 70% strafe attack
Medium Damage — 50% zip past; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% tail fire
Medium Damage — 100% tail fire
Almost Destroyed — 100% tail fire

Missile Coming

No Damage — 20% kill missile; 80% turn and kick
Medium Damage — 50% fish hook; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 50% fish hook; 50% kick it
Medium Damage — 50% burnout; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% gloat
Medium Damage — 100% veer away
Almost Destroyed — 100% veer away



Khajja the Fang



Bakhtosh Redclaw

Enemy Near

No Damage — 80% try to tail; 20% strafe and roll
Medium Damage — 90% try to tail; 10% strafe and roll
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 100% sit and fire
Medium Damage — 100% sit and fire
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 50% hard turn; 50% turn and kick
Medium Damage — 75% fish hook; 25% kick it
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 50% zip past; 50% strafe and roll
Medium Damage — 50% zip past; 50% strafe and roll
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 80% tail fire; 20% strafe and roll
Medium Damage — 100% tail fire
Almost Destroyed — 100% tail fire

Missile Coming

No Damage — 50% fish hook; 50% turn and kick
Medium Damage — 50% kill missile ; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 70% kick it, 30% break left
Medium Damage — 50% turn and spin; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% gloat
Medium Damage — 100% veer away
Almost Destroyed — 100% veer away

Preparing to leave the academy

Other than Maniac, we'd all taken the tactical information on Kilrathi ships and pilots quite seriously. It would be impossible to memorize every single situation, but it didn't take long to understand the scenarios that were most valuable. I spent my time making sure I knew what the enemy would do when I was on their tail, in a head-to-head confrontation, with a missile coming, and after a laser hit.

Maniac was vocal about how he thought the whole deal was nonsense. It happened in class one day and almost cost him his chance at OJT training on a Terran capital ship.

"Why are we spending so much time working with the printouts from a bunch of computer jockeys?, he asked our instructor with disdain. "We should be spending our time in the simulators, or better yet, flying real ships in space. Everyone knows the best pilots use their instincts, not a lot of gibberish that'll just keep you from reacting to the situation!"

I thought the major would burst a blood vessel. His face got red, his hands clenched, and he was trembling with anger. "For someone who has never been in a real dogfight, you've got a lot of nerve," he said. "I'm tempted to bring you up on charges of insubordination and bounce you out of the academy faster than a laser takes to reach its target. One more outburst and it's definite."

As it turned out, Maniac was able to control himself, at least in front of the instructors, and stayed in the academy until we were ready to receive our space assignments on large ships. There we would receive six months of flight training, then jump into one of the systems where we would provide support for the war effort. We had spent two difficult years at the academy, but it would all pay off when we finally reached space.

As one of the top graduates in the class of 200, I was able to select my assignment. Only eight positions were available in the Exeter-class destroyers, second in size only to the carriers, and I decided on the *Formidable*. Maniac and three others were assigned there as well.

We wouldn't have a formal graduation, since our academy training would actually end while we were in space. Our class however, informally gathered before everyone took off to their assignments. It was kind of strange. In our accelerated program, we didn't have the opportunity to socialize that most classes had before us. We really didn't know each other that well. I guess that's part of what happens during a war. Everyone's lives are disrupted.

TCS Formidable

I'd been on some large passenger-carrying spacecraft before, but I wasn't prepared for the sight that greeted me when I first saw the *Formidable* floating in space. At 360 meters, the 8,000 tonne destroyer dwarfed its fighter escort. The scene looked like a swarm of mosquitoes buzzing around an intended target.

"So this will be my home for the next year," I thought as we approached the docking bay. "I guess there's no turning back."

Our first month was spent in training flights in the Hornets. I can't count the number of times I launched, circled, and returned to the destroyer. We practiced flying in different formations, worked on our communications skills and even engaged in mock dogfights. I was surprised how our simple simulator training at the academy had prepared us for flights in real space. Of course, our instructors kept us well clear of asteroid fields while we were in the beginning stages of flight training.

Unusually, Maniac was even enjoying this segment of our training. Since we were actually flying now, he was right in his element. The only problem he ran into was that his enthusiasm translated into some hot-dogging maneuvers that didn't ingratiate him to all of the instructors. He couldn't approach the docking bay on a straight line like everyone else. He had to pull a few snap rolls and then level out at the last second. He couldn't pull escort duty and just fly a simple circling path without flying a few loops and buzzing the conning tower for effect. He kept everyone on their toes.

"I just can't control myself in the cockpit, Prankster," he said after one of our flights. "It's like the joystick has a mind of its own. It's not something I do consciously, it just happens."

Our training progressed to where we were finally practicing combat maneuvers. We flew into asteroid fields, practiced afterburner slides against unmanned drones, and worked on keeping track of targets by radar in crowded conditions.

Weapons training began in the final month before we would jump out of the practice area and into the Vega Sector. We hit stationary and moving targets with our lasers, dumb fire missiles and heat-seekers. We learned to lead targets moving at different speeds with the guns, and how to gain a lock with the Javelin. We wouldn't actually use Pilums, Porcupines, IR's, mass drivers or neutrons until we flew in Scimitars and Raptors, but our training ensured that we were prepared to employ them when we reached our next destination.

Using Your Ship's Guns

There's more to bringing down a target than just putting him in your sights and blasting away with your guns. Every gun has unique characteristics that must be calculated into the equation when you determine your strategy against an enemy fighter.

Laser Cannon — At this point, the laser cannon was employed only on the Hornets, although scuttlebutt indicated that a new class of fighter, the Rapier, would use them as well. The laser's range and speed are its most important characteristics. It's the weakest gun in Terran arsenal, but it reaches its target rapidly, doesn't deplete blaster power quickly, and has a range of 4,800 mrrs (meters relative to range and speed). The range is 1,800 mrrs more than any other gun. As a pilot, this information indicates that you don't have to lead moving targets as much, can fire more shots in a burst, and can hit targets while they're far away.

Mass Driver — The Scimitars and Raptors were equipped with the mass driver cannon, the only weapon in the Terran arsenal where explosive power is not affected by the distance from the target. While you must be within 3,000 mrrs to hit a target, the effect of a hit with this gun is the same at 500 mrrs as it is at 2000 mrrs. The effectiveness of the lasers and neutrons decreases the farther away you get from your target. The mass driver packs more of a punch than the laser cannon and takes more blaster power for each shot.

Neutron Guns — It eventually showed up as the second gun on the Rapier, but at the time the Raptor was the only ship that carried the neutron gun. The neutron was the most powerful gun in the Confederation's arsenal, carrying an explosive force that's 25-percent higher than the mass driver. It's effectiveness decreases the farther away you get from your target and it uses blaster power quickly. As a pilot, it's best to get in close with this weapon, fire a few quick bursts and then wait for blaster power to reach maximum before firing again.

Full Guns — On the Raptor, and eventually the Rapier, you could fire two guns at once. With the Raptor it was the mass driver and neutron. Later, on the Rapier it was the laser and neutron. Full guns really pack a wallop, but they use blaster power at an alarming rate. It's often a difficult call whether the added power is worth the drop in blaster power. Our instructors recommendations were to use full guns when you had isolated a single target or capital ship, but to stick with the neutrons in a crowded dogfight.

Your Ship's Missiles

Hanging around in the pilot's lounge, you heard a lot of conversations where the pilots were discussing the merits of one missile over another. It seemed that every combat pilot had a favorite. Unfortunately, after hearing a few of the conversations, I realized that the pilots were often contradicting themselves. The truth is, that even our best missiles didn't pack enough of a wallop to take out enemy ships unless their shields were damaged. The best way to damage their shields was to blast them down with our guns.

Terran ships carried a full complement of missiles, dumb-fires, heat-seekers, image-recognition, and friend-or-foe, but we couldn't rely on the explosive power of a single missile to take out enemy ships. With a lucky hit at incredibly close range, we might take down a light fighter, but the odds were always against us. Using multiple missiles is equally ineffective. In most situations, the enemy's shields regenerated before the second missile had a chance to strike.

While Terran scientists were working on improvements, the missiles in our inventory carried about the same amount of explosive material. Hitting an enemy with a Javelin HS was about the same as hitting one with a Pilum FF. What made a real difference, was the range from the target. A missile at long range was almost worthless unless the enemy ship was so damaged that the pilot was ready to eject. At close range our missiles could really jolt the pilot and make sure he knew we were nearby.

While we studied all the missile statistics in the classroom, the greatest lesson we learned was to rely on our guns in combat. We could take out every enemy ship known at the time with nothing but the laser cannon on a Hornet, although it was much easier with the mass drivers or neutrons.

Joining the War

It wasn't fun and games anymore. We jumped into Vega Sector and prepared for our first missions in space. No more drones or target ships. No more mock dogfights or training maneuvers. This was real, and I was scared.

Since we were still in training, we would operate in the safest section of the Vega Sector. The destroyer would be our base of operations as we flew escort missions in Hornets to move supplies around where needed. Normally, we escorted Draymans, flying as wingmen with veteran pilots. We didn't expect to meet the enemy on these missions, but Confederation policy dictated that every convoy include a fighter escort.

My first 20 missions were routine. I just stayed in formation, behind and to one side of my wingman and kept an eye on the radar display. It wasn't much different than the training flights I'd flown months before until my 21st mission.

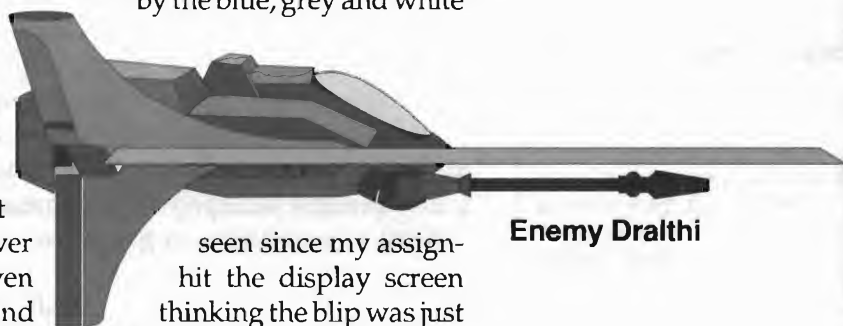
We had moved a little farther into the sector and were protecting two Draymans filled with medical supplies. The convoy was headed for the second planet in the Ar dai System, an area controlled by the Confederation.

I was flying as wingman with Major James J. Jones on the farthest left flank of the convoy. From my position, I would be the first to pick up any enemy activity from that side of the convoy. I was almost mesmerized by the blue, grey and white

blips on the radar when a new color caught my eye. I didn't believe it at first and was a little slow in telling the major that an enemy ship had appeared. It was the first red blip I'd ever ment to the *Formidable*. I even with the heel of my hand a glitch in the system. It wasn't. Later, Jones told me I almost blew the speakers in his headset when I screamed out my warning.

The major told me to form on his wing and I swung into position. I guessed he was waiting to see whether a single enemy fighter would approach our large convoy. By the time auto-targeting identified it as a Dralthi, Jones was ordering me to break and attack. I couldn't believe this was really happening and I fought to control my bladder.

I broke left and down and stayed in position to protect my



seen since my assignment hit the display screen thinking the blip was just

Enemy Dralthi

wingleader. We didn't stray too far from the Drayman, but the Dralthi just kept coming. Jones fired two shots from the laser and I let loose with a dumb-fire at long range. The Dralthi wasn't stupid, and turned to run. We let him and moved back into position with the convoy. Jones was calm, but I couldn't settle down. I kept such a close watch on the radar for the rest of the flight that I was lucky I didn't run into my wingleader or one of the Draymans.

I was surprised when Jones complimented me at the mission briefing with Commander Della Guardia. I have to admit my head swelled by a few hat sizes, even though I didn't think I'd done anything special.

As it turned out, that was my final mission from the *Formidable*. Soon afterward, the academy trainees all received their commissions as 2nd Lieutenants and permanent assignments. Maniac and I would transfer to the *Tiger's Claw* in a few days, while the other five trainees would remain with the destroyer. I thought I was ready.

The Vega Campaign

Other than the six months spent in spacedock for repairs following Custer's Carnival, the *Tiger's Claw* had been in the Vega Sector for 10 years. Since 2650, enemy activity had been sporadic, and most of us felt the Kilrathi had simply probed the system to test our strength and resolve. Soon after, however, Intelligence scanners indicated an enormous buildup in Kilrathi strike forces. According to analysts, the Enyo System, which the Kilrathi abandoned following an engagement in 2639, was the first target. We jumped there three days later.

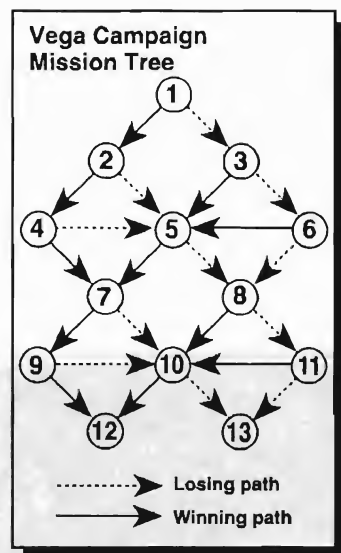
Everyone's nerves were on edge, but you could see that the change in battle status had affected the rookies, myself included, more than the veterans. The banter and horseplay had ended and each of us had withdrawn to try and find whatever it was we might need to survive.

I knew I was prepared. The year I spent on the *Formidable* as part of my academy training had given me confidence. While my only combat experience was launching a Dart at a retreating Dralhti during an escort mission, at least I'd seen the enemy and known the icy fear that came when a red blip appeared on the radar screen. I knew I wouldn't run.

I'd absorbed the knowledge of previous pilots who engaged the Kilrathi from the training manuals. I'd studied the history of the Galactic War, put in hundreds of hours dogfighting in the simulator at the academy, and, in my short time on the carrier, bugged Angel, Spirit, Bossman, and Iceman whenever I had the chance. I downed a few mugs of Goddard Special while listening to Shotgun tell tales of his harrowing missions against the Kilrathi. It all helped.

Colonel Halcyon had ordered every pilot to appear at mission briefings tomorrow morning at 0800 hours. I knew I wouldn't get any sleep that night, but oddly enough, I felt a sense of calm. That's not to say that I wasn't afraid, but it was strange that my fear was not of dying. What really scared me was that I might make a mistake that led to the death of others. Above all, I wanted to perform as a professional, to do the job I'd been trained for, and to support my fellow pilots. The next day was the first mission, and finally, the anticipation would end.

Anticipation



Author's Note

The above mission tree represents the winning and losing paths in *Wing Commander I*. The numbers correspond to the following systems:

1. Enyo System
2. McAuliffe System
3. Gateway System
4. Gimle System
5. Brimstone System
6. Cheng-Du System
7. Dakota System
8. Port Hedland System
9. Rostov System
10. Hubble's Star System
11. Venice System
12. Hell's Kitchen System

Enyo System Mission 1 Alpha Wing

The briefing room was buzzing until Colonel Halcyon entered and outlined the mission and assignments for the Killer Bee Squadron. I was thankful that all new pilots would be flying as wingleaders, with veterans protecting our wings. Spirit and I were Alpha Wing, flying Hornets on a patrol to check three jump points. Asteroid fields were expected near Nav 2 and 3.

The launch was a good one. I called up the Nav guidance system from the keyboard and locked in on Nav 1 before engaging autopilot. As we raced through space, I ran diagnostics on the weapons, guidance, armor, and shield systems. Spirit tracked activity on radar.

I was checking the readouts when Spirit's voice echoed through the headset. "Excuse me, Commander, I have noticed enemy ships," she said. I wasn't sure why she was being so polite, but I suddenly felt sick with fear. "Get a grip," I thought.

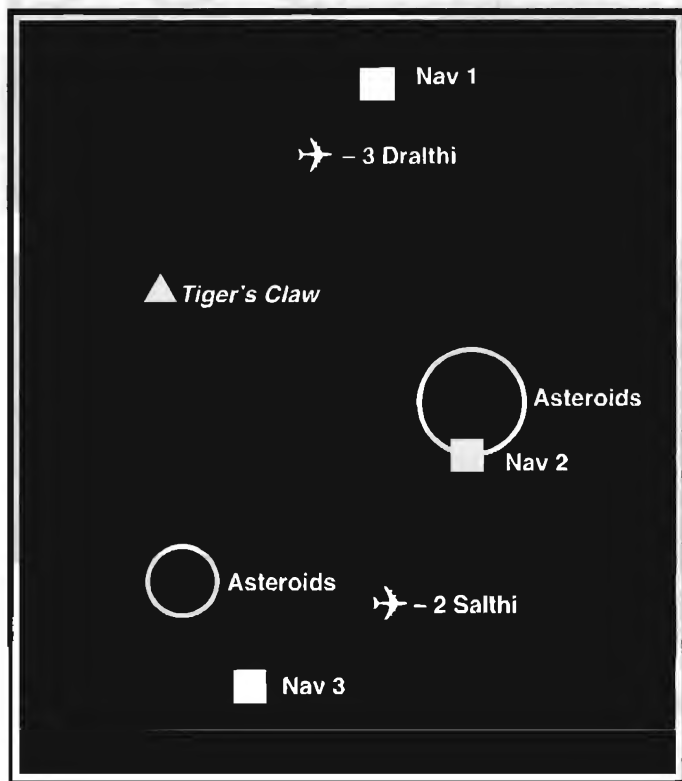
I kicked the throttles up to full, swung left, and used my right VDU to target the enemy. It was a wing of three Dralthi! They were almost as fast as our Hornets and carried more armor in

their fore and aft shields, but I thought we could handle them. "Break and attack," I radioed to Spirit and watched her roll to the left.

I followed quickly, but took a path to the right that would keep Spirit and me well separated and hopefully split the Dralthi attack. I was so nervous that I started firing my laser cannon while still out of range. Luckily, I caught myself and allowed my blaster power to regenerate before kicking in the afterburners and sweeping in on the lead Dralthi.

The nimble fighter darted up and away while I struggled to follow. I thought some condensation must have formed on the inside of the cockpit's viewscreen, because my vision was suddenly obscured. Then I noticed it was sweat dripping into my eyes. That's when I made the second mistake of the day.

Wingman: Spirit
Ship: Hornet



I selected a Javelin heat-seeking missile and waited for the tell-tale ping that signaled a lock on my target's exhaust. I hit the afterburners to stay on the Dralhti's tail and then launched as soon as I had a lock. In my nervous state, I continued to fire my laser cannon and blew my own missile right out of the sky. "This isn't going according to the books." I winced and took a hit from a second Dralhti that had gained position while I jockeyed around with the first. Luckily, the shields held.

I hit the afterburners again and broke down and right to go after the attacker. This time I kept my wits. I stayed on him and blasted away with the laser. I saw some debris fall and knew that he was almost finished. As he looped up to make an escape, two quick shots finished him off in a shower of sparks. Spirit finished off her target with some laser fire against the weaker shields on the left side of the medium fighter, and I took out the third with a Javelin that I gave time to reach the target. "The simulator was pretty good," I thought, "but nothing prepares you for a real dogfight."

We scanned our radar for more enemies and, once sure that the area was clear, continued on autopilot to Nav 1. The jump point was clear, but about 17,000 kilometers from Nav 2 we hit our first asteroid field. I throttled back to 250 KPS and threaded the needle until we reached Nav 2. One glancing blow rocked the Hornet, but my shields and armor held easily.

The two Salthi appeared before we reached Nav 3 and I ordered Spirit to attack my target. Those nimble fighters can really fly, but their weak aft and side shields were no match for our fighters, especially when they tried to change direction and seemed to hang suspended in space for a few seconds—just long enough for a few quick hits from the laser.

I was starting to feel cocky as we returned to the *Claw*, but another asteroid field brought me back to earth. I struggled to concentrate on this seemingly benign enemy. I knew complacency had ended the careers of many fine pilots in the asteroid fields. The *Claw* was a welcome sight and I circled around to approach from the bow after asking permission to land.

Our Hornets had survived with minimal damage, but I wasn't sure I was as fortunate. My legs were rubbery, my pulse was pounding, and my brain was fogged. After Halcyon's debriefing and congratulations, I headed for the bar.

Mission Hints and Synopsis:

1. Three Dralhti appear before you reach Nav 1. While outnumbered, the enemy is easily destroyed if you concentrate your fire on the side and aft, where their armor is weakest. Avoid a head-on confrontation and launch a Javelin HS if you can approach from the rear.

2. An asteroid field appears before you reach Nav 2. Keep speed at 250 KPS and concentrate for easy passage.

3. Two Salthi attack before you reach Nav 3. Kick in afterburners and slide to the right before opening up with your lasers. Stay close when they turn away from you, and be prepared for an easy shot when they loop back into attack position.

4. More asteroids on way to *Claw*. Keep speed at 250 KPS.

Enyo System Mission 2 Epsilon Wing

After assigning various patrol routes to the other wings, Halcyon ordered Spirit and me to escort a Drayman to a jump point at Nav 2 and hang around until the jump was completed. Since the less maneuverable ship would have trouble negotiating the asteroids near Nav 2, we were to fly to Nav 1 before altering course to the jump point. I'd pulled escort duty previously while flying on the *Formidable*, but those missions were a piece of cake compared with what I knew faced us in the Enyo System.

After launch, I set my speed to 100 KPS to match the cruise velocity of the freighter and took position directly behind the 96-meter transport. All three ships shifted to autopilot and hoped for a scenic cruise to Nav 1. It was wishful thinking.

Spirit noticed the two Salthi approaching from the front and left of our position when we were still 10,000 kilometers from our first Nav point. I knew she wanted to engage, but I ordered her to keep formation until I could see whether they launched an attack on our vulnerable companion.

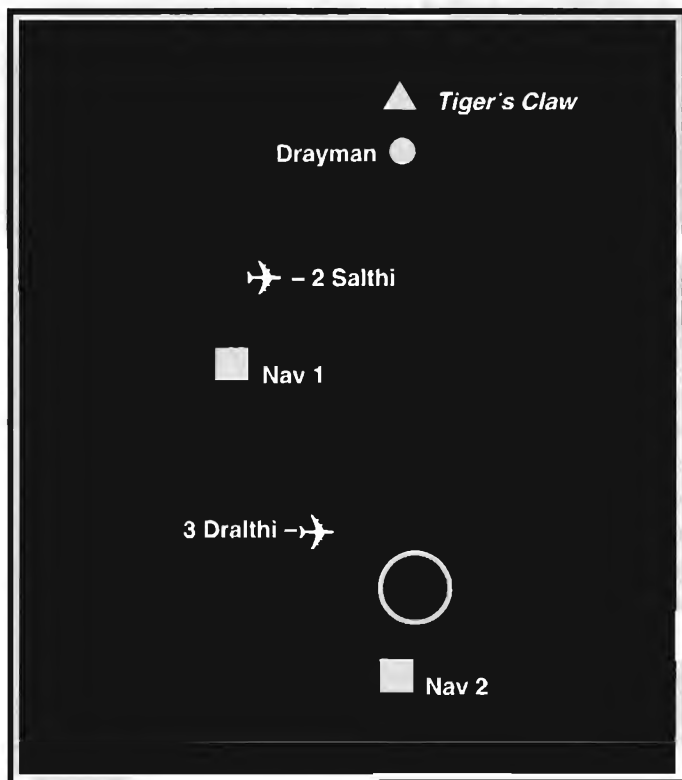
Wingman: Spirit
Ship: Hornet

Seconds later, the first dumb-fire missile headed our way and

I radioed Spirit to "attack my target." Pushing the throttle to 250 KPS, I put the sights on the lead Salthi and let loose with the lasers as soon as the light fighter came into range. After a quick exchange of fire, he turned away and started to run. I knew his strategy was meant to lead me away from the Drayman, but I remembered Halcyon's warning and turned back toward the slow-moving freighter. Sure enough, the second Salthi was boring in. Spirit launched a heat-seeking Javelin and the lightly armored enemy scampered away. We were safe for now.

After ordering Spirit to form on my wing, we cut our speed and resumed our escort position behind the Drayman. The flight to Nav 1 was, luckily, uneventful.

We altered course and headed straight for Nav 2 using autopilot.



Once again, our routine was interrupted when Spirit discovered three Dralhti racing our way. I told her to break and attack, and hoped she would keep her wits and stay close to the large ship we were protecting.

The Dralhti were on us quickly, but they used exactly the tactics that Knight had told me about in the *Claw's* bar. Their attack was characterized by an initial rush followed by a loop either up or down. Then they would rush away and loop again before they began another frontal offensive. Their predictability made our job easy.

In the adrenaline rush, I forgot to increase my speed, but using direction changes and afterburners, I avoided the initial onslaught. When they made their looping retreat, I hit the afterburners and stayed on their tails and rapidly fired the laser cannon. I was right on top of them when they made the second loop, and since I knew they would move up or down, I could easily lead them into a barrage. I took out all three and never used a dumb-fire or heat-seeking missile. That saved the Confederation a few bucks.

Arriving at Nav 2 after our confrontation, I reduced speed to 20 KPS and waited for the accompanying flash that signaled that the Drayman had accomplished her jump. The grey blip disappeared from the radar screen and I headed for home. The asteroids that had necessitated our route through Nav 1 with the Drayman weren't a problem for the highly maneuverable Hornets, and Spirit and I made it to the *Tiger's Claw* with little, if any, damage.

After the debriefing, Colonel Halcyon ordered me to his office. He accompanied me to the flight deck where my fellow pilots stood in formation. I can't describe the pride I felt when the colonel awarded me a Bronze Star, but it was overshadowed by the applause from my peers and the knowledge that I was finally accepted as a member of the crew.

The bar was crowded and I was ready for a few laughs with the gang, but no one acknowledged my presence. I wondered whether I should have showered before I arrived, and headed to a seat at the far end. Shotglass didn't even ask what I wanted.

They let me stew for about five minutes, then the bar suddenly erupted with howls and shrieks. Shotglass came over with the champagne and Iceman led the toast. Whew!

Mission Hints and Synopsis:

1. Two Salthi attack as you escort the Drayman to Nav 1. Offer firm resistance and don't stray too far from the freighter, and the Salthi will eventually retreat to fight another day.

2. Three Dralhti attack as you approach Nav 2. Don't let the first target draw you too far away from the Drayman, but if you can score a quick kill you'll have plenty of time to turn around and dispatch the other two enemies. Laser cannons are plenty on this mission, although firing a dumb-fire makes them take evasive action and sets them up for your lasers.

3. Make sure you wait for the Drayman to jump before heading back to the *Tiger's Claw*. You'll hit asteroids if you don't watch your speed on the return to the carrier.

McAuliffe System
Mission 1
Beta Wing

Our four point patrol is designed to make sure potential jump points are clear. I'm flying with Paladin on my wing this time, and from everything I've heard, the 45-year-old Scotsman is as protective of his leader as anyone in the fleet. That's a relief. It's obvious that he's skilled or he'd never have survived his 22 years as a combat pilot.

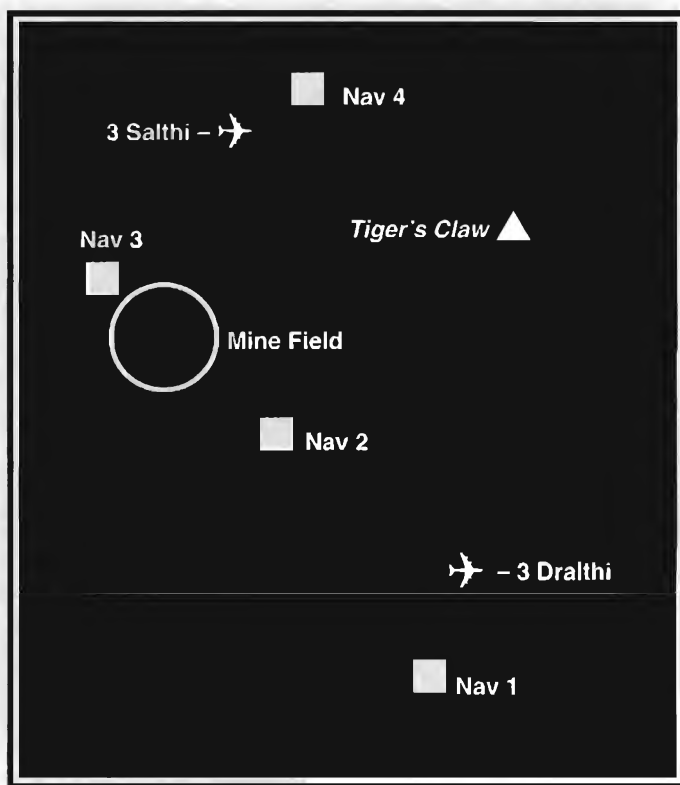
We've moved into Scimitar medium fighters for this round against the felines, and I'm a little concerned that the decreased range of the Gatling mass-driver cannon it carries will be detrimental. Paladin reassures me that its greater power more than makes up for the loss in range, but the Scimitar is also a bit slower than the light Hornets. Luckily, most of the increased weight is due to the alloy armor and these babies are really protected in the rear. That sure can't hurt when your concentration is keyed on a target to the front and a wily Dralthi commander sneaks into a rear position and starts blasting away.

Wingman: Paladin
Ship: Scimitar

Immediately on autopilot, we were headed toward Nav 1 when Paladin yelled a warning. Three Dralthi were crossing

from left to right directly in our path. I told him to keep formation and broke hard to the left, hoping to approach the Dralthi wing from the rear. I was partially successful. As soon as we closed within 3500 kilometers they started to swing around and meet our attack. I told Paladin to attack my target, punched the throttle and began a wavelike up-and-down and side-to-side motion to foil their first shots.

Paladin slipped up and to the left while I continued evasive tactics. I didn't even fire a shot until the first Dralthi rocketed by me. Then I hit the afterburners and turned to follow. I armed a Javelin HS, but the Dralthi was quick to roll and loop and I wasn't able to get a lock, so I decided to rely on the power of my guns. As long as I stayed close and didn't waste blaster power while out of range, this guy was in trouble. I took a few hits on the



left side from another fighter, but continued to stay with my first target. A few hits from the Gatling and I noticed his least protective right shield was weakened. A flash and jarring motion signaled a blow on the right, but I wanted to finish off the initial Dralhti before his shields had time to regenerate. I hit the afterburners again and came sliding around on his right side, where two quick blasts sent him down.

One of the Dralhti had come up from behind, while the other was circling to approach on my weak side. I ordered Paladin to attack my target, pulled back on the stick, punched the afterburners twice, and looped back to surprise the cat on my tail. With two of us firing, the skirmish was quickly won. The third Dralhti tried to run, but we stayed on his tail and I launched a Javelin that ran right up his exhaust pipe and stopped the retreat. I was jazzed, yelling and screaming, while Paladin remained calm and unflustered.

"I don't know how this kind of action becomes old hat to anyone," I thought.

Nav points 1 and 2 were clear. We hit a mine field on the way to Nav 3, but without any enemies in the vicinity, we gingerly picked our way through without incident. I thought asteroids were bad, but those gleaming red and silver mines can really do some damage with a direct hit.

Three Salthi showed up about 12,000 kilometers from Nav 4. After giving a Break and Attack command, I blasted to max speed. Damn, those fighters are quick! They seemed to be running circles around us, but with their unbelievably weak side shields our mass drivers wreaked havoc. I didn't see how Paladin took out the first one, but I went ahead and took a few shots on my bow as they approached, and then tried to lead them with the rapid fire of the mass driver as they passed to one side. It worked, although my ship was going to show some damage when I returned to the *Claw* this time.

Maniac, my old nemesis, and the crusty Bossman were in the bar when I returned, discussing the imminent possibility of engaging Kilrathi battleships. Bossman said the only way to take on such powerful ships was to concentrate on the fighter cover first, so you could go after the big ships unhampered. Of course, Maniac had his own ideas, but, as usual, they were just off the cuff and about as useful as a litterbox.

Mission Hints and Synopsis:

1. Three Dralhti are discovered before you reach Nav 1. Since they are traveling from left to right, try to approach from the rear to get off the first shot. Keep your blaster power up and get in close before cutting loose with the mass driver.
2. Take extra care in the minefield, using a speed of 200 to 250 KPS.
3. Go after the sides on the three Salthi that attack — their armor is only 1.5 cm on the right and left, with no shields to protect them. They are strong in the front, with both shields and armor.

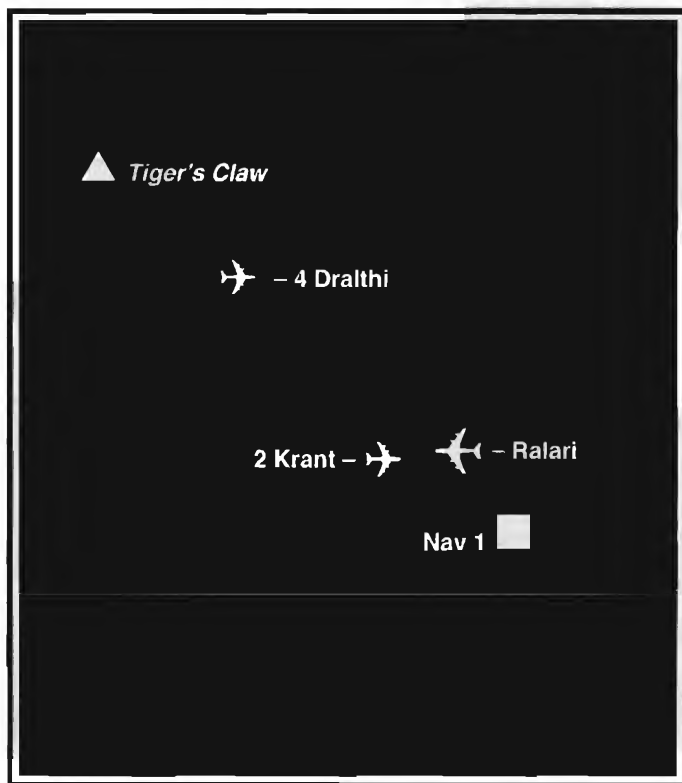
McAuliffe System
Mission 2
Theta Wing

The Confederation is preparing for a major offensive, and the Killer Bee Squadron must clear the way for supply and transport ships to enter the McAuliffe System. Mission Control reports that a large bogie has jumped into the system and is heading toward the *Claw*. It's an unknown ship at this time, but all indications point to its being a well-guarded warship. Flying Scimitars, Paladin and I have been ordered to thwart the approach of the massive enemy ship and any other bogies we encounter en route.

As we race to the launch pad, Paladin breathlessly exhorts me, "You'll need to keep your wits about you laddie. The first time you stare into the flak from a Kilrathi warship is a moment you won't soon forget. It's almost a vision from heaven, until you realize those puffs of smoke hide power that'll send you to an early grave."

"Don't worry about me, Scotsman," I grimaced. "I've taken enough damage from the small fighters to keep me on my toes. Just make sure you save your missiles for the big ship. Don't waste 'em on the escorts."

Wingman: Paladin
Ship: Scimitar



"What we're facin' is more than just a notion, Lieutenant," he yelled over his shoulder and took the steps two at a time to the cockpit.

We were only 30,000 kilometers from the *Tiger's Claw* when four Dralthi broke straight up and out of the glare of the Vega Star. If they had been coming straight at us, surprise would have been on their side. They must have been rookies to miss that chance.

I told Paladin to hold formation and corrected our course to take them from the rear. When we closed to 3000 kilometers I shouted out the Break and Attack command. The catfight was on, with all the howling and screeching you'd expect. I hadn't faced this many opponents before, but managed to take out two with the mass-driver cannon before they really knew what hit them. Paladin scored

on one and then we teamed up to take out the fourth in a fiery blast. It wasn't going to get any easier.

The unknown had moved more quickly than anticipated. We were almost 16,000 kilometers from Nav 1 when Paladin identified our target and escort. It was two Krant, heavily armored and shielded medium fighters, and a Ralari, a slow-moving 344-meter destroyer with six turreted lasers.

Going up against the Krant, I ordered Paladin to attack my target. I wanted to concentrate our fire to break down their shields, and stay in close so that our mass drivers gave us some small advantage over their long-range laser cannons. The strategy worked on the first Krant.

We made frequent use of our afterburners to stay with him, and once I noticed that his rear shields had been weakened, we held our fire until we had a look at his exhaust pipes. The blue exhaust was soon replaced by the glowing red embers of an exploded ship.

The second Krant was on the other side of the Ralari. I changed our strategy by telling Paladin to break and attack, then waited to see which way he would go. I tried to use the Ralari as a shield and circle behind it to surprise the other escort. The incessant laser fire made me swing wide of my planned route, and by the time I recovered Paladin was taking a lot of incoming rounds. Slapping the afterburner switch repeatedly, I was able to get behind the Krant. I wanted to save my missiles, but I launched a Dart to save my wingman. The Krant made some quick evasive twists and turns that cost him dearly. Paladin and I finished him off with the Gatlings.

Taking on the Ralari was anticlimactic. I knew Paladin had experience with the big ships, so I left him on his own. I approached from the rear and fired all my missiles as quickly as possible, but withheld the use of my guns. Once I was 1200 meters away, I pulled back hard on the stick and hit the afterburners. Then I reversed my turn, came back at the Ralari from the rear, and unleashed the mass drivers. The hardest part was waiting until I was within range. The mass driver was devastating if I started my fire at 2000 meters. Five or six repeated attacks and the destroyer split into a million pieces. It was quite a show, but I couldn't shake the feeling that it was only pretty from the outside.

Mission Hints and Synopsis:

1. Keep your speed down until you can determine the direction in which the four Dralthi are traveling. Then set a course that approaches from the rear and use your mass driver at close range.

2. The two Krant are really tough opponents and you'll lose if you trade them shot for shot. Defensive flying is as important as your offensive power against these foes.

3. When you attack the Ralari, avoid the sides and front, where the fire power is heaviest. Use your missiles wisely, holding the firing of your guns until you're sure that a missile hits. With the mass driver, avoid firing until you get really close and then blast away quickly. Don't approach a Ralari too fast or a collision is quite possible.

McAuliffe System Mission 3 Psi Wing

While the *Tiger's Claw* is scheduled to jump out of McAuliffe System tomorrow, the battle here will continue and additional Confederation sports and tankers are arriving hourly. A Kilrathi carrier has been spotted, and we expect heavy resistance as we escort the larger ships to their appropriate positions. The worst news is that Bhurak Starkiller, the Kilrathi's leading ace, with 64 kills recorded, is known to be patrolling the area. This is one instance where I hope the Intelligence analysts have missed their mark.

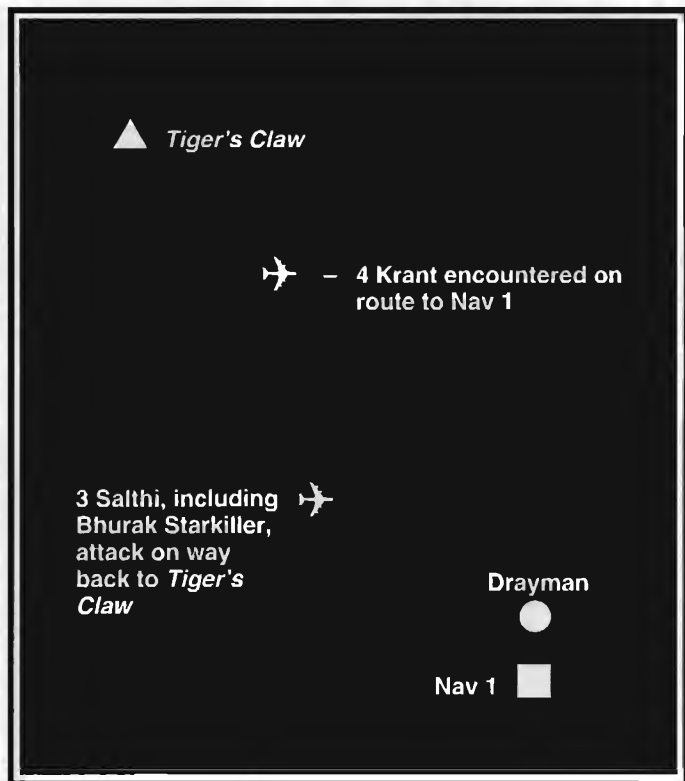
Paladin doesn't share my wish for a scenic mission. Years ago, Paladin had Bhurak in his sights but was forced to eject when another Salthi destroyed his ion drive and computer systems. Paladin survived and won the Golden Sun, but his wingman never returned.

"He passed so close when I was floating in space I could almost reach out and grab a whisker," Paladin recalled. "He'd just taken out my wingman and was grinning like a Cheshire. That's what I'll never forget ... that demonic grin. I was sure he

would turn and send me to meet my maker, but a wing of Hornets chased him away. I dream of meeting him again. Just once. That's all it would take, just once."

As Psi Wing, Paladin and I would be escorting a Drayman back to the carrier. It sounded like the easiest mission so far. It might have been, except for the two wings (two fighters in each) of Krant that showed up before we even reached Nav 1. I directed Paladin to attack my target, slapped the throttle to full, and headed straight for the nearest enemy ship. As soon as I saw the Krant fire, I shifted about 30 degrees to the right and hoped the afterburners were ready. The extra power put me into a controlled slide and I opened fire with the Gatling. He swept by and I rolled and turned so I could follow his exhaust. A few seconds later, he was history.

Wingman: Paladin
Ship: Scimitar



With the same tactic, I took out a second Krant and turned to look for the third. He was crossing directly in front of me, so I led him by about two Salthi-lengths and cut loose a Dart DF that caught him amidships and send him to the great catnip garden in the sky. We'd almost reached the Drayman by now, so I didn't bother to chase the fourth Krant which was hightailing it in the opposite direction.

The dogfighting had led us close to Nav 1, where the Drayman waited for her escorts. Knowing she would travel at top speed, I throttled back to 150 KPS and took position behind and to one side of the sport.

We hit the Salthi soon after meeting the Drayman. Bhurak Starkiller was the closest attacker, and I went after him, telling Paladin to attack the same target. Man, that cat can really fly. I was hoping the two of us could take him out quickly, but he seemed to anticipate every move we made. Before I knew it, Bhurak had led us away from the sport and the Drayman was under attack by his companions. I knew Paladin had a score to settle, but I ordered him back into formation and we raced back to take on the two remaining Salthi.

With a maximum velocity of 480 KPS and outstanding acceleration, the light Kilrathi fighters can run circles around our Scimitars. In the hands of an experienced pilot like Bhurak the weak armor isn't a disadvantage. I told one of the Salthi pilots, "Bite it, cat-face!" and he responded immediately by turning to attack us. By the time I attempted to bait the other pilot, it was too late for the Drayman. The fireball was enormous.

I was stunned, hurt, shocked, and angry. I couldn't believe I'd let myself be taken in by Bhurak's tactics. The Drayman had carried a crew of 24 and vital supplies for the Confederation effort. Tears rolled down my cheeks, my heart pounded, and for the first time I realized the responsibility that comes with being a Confederation pilot. It was a responsibility I had failed.

When we returned to the *Claw*, I discovered that dozens of scientists at the Terran Research Colony on McAuliffe had been murdered by the Kilrathi. I usually like to stop and swap tales in the bar following a mission, but the only reason to hit the bar this time would be to drown my sorrows. I headed for the bunk to try to get some sleep. After what I had just experienced, I knew sleep wouldn't come easy.

Mission Hints and Synopsis:

1. Two wings with two Krant in each attack on the way to Nav 1. Using afterburners and a sliding maneuver to gain position and avoid incoming fire, the mass driver cannon took out the first two. If you can get close and approach a Krant from above, the Dart is an effective weapon.
2. Match your speed to that of the Drayman and then hit autopilot to head for the *Claw*.
3. Bhurak will try to lead you away from the Drayman to allow the rest of the wing to attack. Don't let your personal battle take precedence over the mission objectives. Let Bhurak run away after a quick exchange, then taunt the Salthi pilots who are homing in on the Drayman. They'll attack you instead.

Between Missions

My contact with Maniac during our first few weeks on the *Tiger's Claw* was minimal. Occasionally, I'd talk to him in the bar or mess hall for a few minutes, but the conversations were impersonal and usually focused on ship's business.

It's funny. With all the complaining I've done about the guy, you'd think I really hated him. I didn't. It's just that his style always rubbed me the wrong way. We had shared two years at the academy and we were fighting for the same cause, but I couldn't understand his compelling need for independence and his total defiance of authority.

I'm not the most mature guy in the world, but I kept searching for signs that Maniac was becoming more of a team player. The scuttlebutt, however, didn't lead me to believe that was true. Around the carrier, he was becoming known as the guy who always had the answer and who wouldn't let you forget it. He would top almost any story you told, to the point of obviously fabricating people, places, and events. He tripped himself up constantly, and was always the butt of sarcastic remarks in the locker rooms.

The veteran pilots were confused by this guy as a pilot. On one hand, they were amazed by his skill. On the other, they were chagrined by his attitude.

"I've seen him escape from situations where I wouldn't have given him a mouse's lifetime on a Kilrathi freighter," Iceman told me. "It's obvious that the guy throws away the book and flies by the seat of his pants, and that's not necessarily bad. Some of the best pilots in TCSN history didn't play by the same set of rules as the rest of us. He's shown me a few moves that have never been diagrammed and probably couldn't be taught. I hope I can remember them when the time comes."

Captain Devereaux remembered her first mission flying as wingman for the young pilot. "We were flying Hornets in a crowded asteroid field when four Dralthi surprised us," she said. "Well, Maniac just fired his burners and left me in the dust. He didn't say to break, follow, attack, or do anything. He just took off. I raced to catch up and tried to cover him by attacking a pilot who was approaching his rear, but Maniac called me off."

"He started streaking through the asteroids with the Dralthi hot on his tail. And he was flying so close to the stones that it looked like he was running a slalom course. I figured out what he was doing when he led that Dralthi head-on into one of the

asteroids. It was unbelievable. I'd never seen a Hornet flown like that before, and I might never again. Say what you want about Maniac, he's one of the best pure flyers I've ever seen."

If flying was the sole criterion in judging a combat pilot, few would leave Maniac's name off the leader board. Unfortunately for him, the intangible qualities were just as important.

"I haven't figured the guy out yet," noted Mariko. "I flew a few missions with Maniac where he performed as professionally as any pilot in the fleet. I've flown others where he seemed to be totally oblivious of anyone but himself. It seems that he can only stand so much, and then he has to break away and follow some internal autopilot. He's like a little kid."

Hunter was a little more direct in his assessment. "The kid will never make it," he blurted, "cause he doesn't have the head for it. When the enemy shows up he's so juiced on adrenalin that he misses assignments, mistakenly fires at Terran ships, disobeys instructions, and neglects his responsibility as a wingman. Mark my words, one of these day Maniac won't come back ... or even worse, the person flying with him won't."

I guess I wasn't surprised by the griping. While Maniac had graduated near the top of the class, many thought he would have been busted out if there hadn't been a war on. It didn't look like things were improving for him on the *Tiger's Claw*. He still had some growing up to do and it would have to happen fast.

Gateway System Mission 1 Delta Wing

I didn't fly the missions in the Gateway System, but due to that great 20th-century legislation, the Freedom of Information Act, I was able to obtain transcripts of the debriefing sessions as recorded automatically on the *Tiger's Claw*.

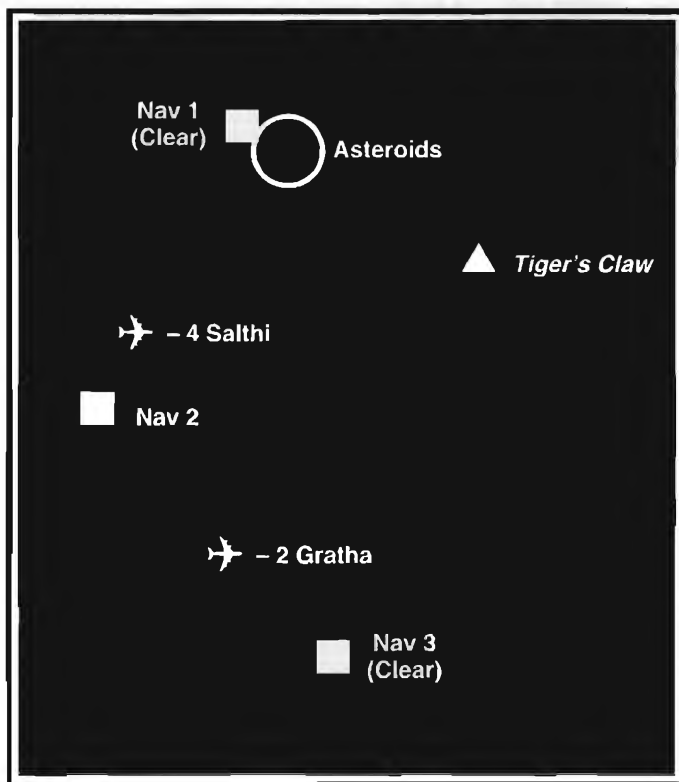
Halcyon: "All right, Major, let's hear your report."

Iceman: "Paladin and I patrolled all three Nav points, Colonel, and I'm happy to report they're clear now. The debris near the Claw was an asteroid belt, not the minefield you were worried about. We circled Nav 1 and couldn't find any bogies. Negative electronic scans confirmed our visuals."

Halcyon: "Intel wants to know where you encountered resistance — it will help in mapping our strategy for Gateway. Any surprises?"

Iceman: "Nothing we couldn't handle, sir. Four Salthi hit us about 10,000 kilometers from Nav 2, but the standard strategy of keeping them on the defensive seemed to work. We burned a lot of fuel using our afterburners to crowd them, but the laser cannons on our Hornets are dynamite against their thin side and rear armor. I don't think we've met their best pilots, though. They didn't use their better speed and turning radius very effectively."

Wingman: Paladin
Ship: Hornet



Halcyon: "According to the flight recorder data, you ran into some Gratha out there. This is our first encounter with them. What's the scoop?"

Iceman: "They're as tough an opponent as I've faced, colonel. They carry lasers, mass drivers, image-recognition and heat-seeking missiles, and some Porcupines. I'm glad there were only two of them near Nav 3 or you might be listening to our flight recorders instead of holding a personal debriefing. A frontal attack is foolhardy. It's obvious that their shields and armor are heaviest there. We had the best success when both of us would concentrate our fire on the side panels of one ship as it turned away."

Halcyon: "That's a solid report, Major. Those observations could make a big difference. I'll pass it along to Command Intel. Great flying out there ... you too, Paladin. Dismissed."

Gateway System Mission 2 Kappa Wing

The following transcript followed a mission necessitated by a Code Red Alert. Multiple wings of Dralthi were attacking the Tiger's Claw.

Halcyon: "Glad to see you back, gentlemen. I heard your ships were heavily damaged. What happened out there?"

Iceman: "There were three wings of Dralthi, Colonel, so the numbers were definitely in their favor. When you have that many ships attacking from so many different directions, it's tough to stay with a single target. The problem is, if you don't, it gives them time to repair damage and shield power."

Halcyon: "I've heard that information many times, Major. Give me something new that will help when other pilots are outnumbered."

Iceman: "The most important thing is to take out the closest targets right away, sir. I ordered Paladin to break and attack so we could divide their attention between the two of us. The Darts were the most effective weapon, Colonel. I wish the Hornets carried more."

"The tricky part is in timing the launch. That slight delay between hitting the fire button and actual release takes some getting used to. I tried to approach from the side, so that they were moving perpendicular to my line. Then I led them by about half a ship and banged that fire button. You've gotta be close sir, real close."

Wingman: Paladin
Ship: Hornet

Halcyon: "How about the Javelins and laser cannon, Major?"

Iceman: "The long range of the lasers is really an advantage in heavy traffic, sir, but the Javelins were just about useless. By the time I locked onto a target and fired, those Dralthi were looping away and the missile was losing the heat signature."

Paladin: "If I could break in, sir, I think I discovered a trend that'll rattle their brains in the right situation. We've always known that taunts often lead a pilot away from the primary target and he'll turn to attack the pilot who sent the message. They seem to take it personally. Well, Iceman was caught up in a real seat-squirming of a dogfight and I was going after the third wing that was hitting the Tiger's Claw pretty hard. Just by luck, I think I told the Kilrathi wingleader to 'slag off.' I never expected it, sir, but every plane in that wing turned to attack me. When we're trying to draw fire away from a capital ship, sir, I think we should just cycle through every enemy with our taunts. Once we burn the ears of the wingleader, he'll have every ship in his wing changing targets. One occasion doesn't make it a habit, sir, but it's something we should test."

Halcyon: "No doubt about it, Captain, that's worth looking into. I'll have Communications set up a priority message on the network."

Gateway System Mission 3 Sigma Wing

According to the transcripts, this mission, flown by Iceman and Knight in the Gateway System, bears striking similarities to the escort mission I flew with Psi Wing in McAuliffe.

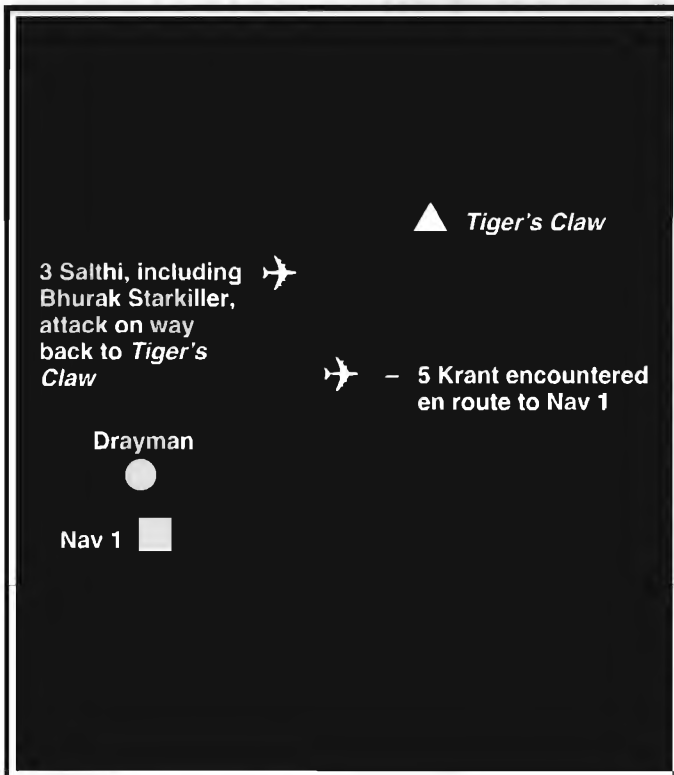
Halcyon: "I heard you took out Bhurak Starkiller, Major. What's the scoop on dogfighting with a Kilrathi ace?"

Iceman: "We'd destroyed five Krant on the way to Nav 1, met the Drayman, and were headed back to the Claw when three Salthi attacked. Bhurak was closest and I knew it would save lives in the future if I could eliminate him."

Halcyon: "How did you engage and still protect the Drayman from the enemy?"

Iceman: "Normally, I tell my wingman to attack my target when meeting a Kilrathi ace, but I ordered him to break and attack. When he took off after another target, I slammed on the afterburners and went after Bhurak. I was hoping Knight could keep the Salthi busy until I returned. It was a judgement call."

Wingman: Paladin
Ship: Hornet



"Bhurak flies like he was born in a cockpit. I've never seen an enemy pilot make a Salthi dance like he did. On the first pass, he hit me with two shots from his laser and my fore shields went down. Then he made a hard turn and scooted directly away. I followed with afterburners and was able to get a lock with the Javelin. I launched, but he dodged the heat-seeker and came straight at me. This time, though, I refused to meet him head-on.

"I yanked the stick back. I'm lucky it didn't break off. I went to afterburners and looped back on him. Bhurak was ready for my tactic and hit me from below. He started to turn and run, but this time I was on him like a cheap suit. I stayed on his tail, punching the afterburners and cutting loose with the lasers. He was rolling and changing speeds, but I was hitting him hard, and finally he went down. It was surprisingly easy, but the key to a successful mission was Knight's ability to keep the other Salthi busy until I returned to the Drayman."

Halcyon: "You were lucky, Major."

I'd come down with a case of Grinard's Virus and was grounded while we were in the Gimle System. I wanted to fly a Raptor, but the virus affects your equilibrium and Halcyon had me working communications. It gave me time to hit the high score on the Train-Sim and hang around and jaw with the returning pilots. I was sick the entire time we were in the system.

The first night, after my shift, I found Mariko and Angel sitting at a table and trading jibes with Shotgun. I walked in on the tail end of their discussion, just in time to hear Spirit send a final retort to the former pilot.

"If all-women wings had been allowed back in '38," she snapped, "this war would already be over!"

I walked over and took a seat. "Must have been a rough one," I remarked. That's all it took.

"Rough doesn't begin to describe it, Lieutenant." Spirit took a sip of her Special and stared straight down at the table. "The four Salthi that attacked as we launched from the *Claw* didn't create any problems, but protecting the Exeter at Nav 1 was like taking a ride through hell, especially when the two Jalathi joined the action. Thank Research and Development for the new full-guns option on the Raptor. It saved our necks."

Angel chimed in. "The enemy ships were blasting away when we arrived, and our taunts worked in drawing out the wing of three Salthi. We had them down in minutes, but the six-gun Jalathi were wreaking havoc. Spirit told me to break and attack, and I remembered that the Jalathi were the most heavily shielded and armored ships in the Kilrathi fortress. I went to full guns. The blaster power they require is impressive."

"On my first pass, I circled behind the Exeter, rolled in on the first enemy ship I saw, and opened up. I assumed that since full-guns included a mass driver, it would be effective at longer range. The problem was, the neutron was not useful at that range, and by the time I was close enough to be effective, my blaster power was too low to fire even a single damaging shot. Lasers against a 16-cm fore shield are like shooting cotton balls to stop a charging 5-ton draptil."

"If there had been just one more Jalathi in the wing," Spirit concluded, "the Confederation Exeter would be history. Fortunately, we learned our lesson quickly enough. Use full guns and save your blaster power until you can see the pilot in the cockpit. Then open up."

Gimle System Mission 1 Zeta Wing

Wingman: Angel
Ship: Raptor

Mission Hints and Synopsis:

1. Four Salthi attack as you launch from the *Tiger's Claw*. Use your lasers at long range, then switch to neutron guns for the in-close combat.
2. Taunt the Salthi when you reach the Exeter, but don't expect every enemy ship to turn away from their main mission. Get rid of the three Salthi quickly, so you can direct your attention on the Jalathi.
3. The two Jalathi are sending six shots each your way, so use your afterburners to keep them off your tail. Use full guns, but only at close range or you'll deplete your blaster power before you can do any real damage to their shields.

Gimle System Mission 2 Omicron Wing

It was the biggest disappointment of my career. Before I hit sick bay, Halcyon had told me I would be flying with Angel in the Gimle System. Now, Lieutenant Mariko was testing the prototype Rapier instead. Imagine, 450 KPS with enough acceleration to pull six gees, a laser cannon for distance, a neutron for trading punches in close, and the maneuverability to keep up with a Salthi. Now that's a class machine.

As soon as I heard Omicron Wing had returned from their three-point patrol, I dashed to the bar and waited for their grand entrance. Everyone had the same idea and pushed into the tight quarters, to hear their report first-hand. They were beaming as they entered.

"Comparing a Rapier with any other ship we fly is similar to comparing the first hydrogen propulsion units with the ion drives we use now," said Angel. "Navigation point 1 was clear, but four Dralthi attempted to prevent our progress at 11,000 kilometers before Nav 2.

"We all know how quick and evasive they can be. With the Rapier, we hit them with the lasers as they approached at long range, and then

matched every twist and turn when they came in close. I switched to neutrons, and since we can outrun them by about 50 KPS, just stayed on their tails and fired. A few shots and they were screaming about the black void of space. Spirit was just as successful using full guns."

"The two Gratha that we hit before Nav 3 display the real value of the Rapier," noted Spirit. "I just avoided their initial run toward us, then used my speed and maneuverability to take down their shields with my guns. One note of caution, however. Since the Rapier's maximum velocity is more than 100 KPS faster than the Gratha's, you risk collisions with the enemy if you aren't careful. Once the Gratha's shields were weakened, I took them out with a Spiculum IR and a Pilum FF. I fired the Pilum even though Angel was close by. I knew the Rapier would help her avoid the missile if it locked onto her ship."



Mission Hints and Synopsis:

1. Nav 1 is clear, but four Dralthi attack before you reach Nav 2. Hit them with laser fire right away, then switch to neutrons or full guns and use your maneuverability to stay close.
2. The Rapier is so fast that you must take pains to avoid collisions with the enemy ships.
3. If you can avoid the initial rush of the two Gratha who attack before Nav 3, try to weaken their shields with your neutron guns and then use the Spiculum and Pilum missiles.

Captain Devereaux and Lt. Mariko weren't pleased when the prototype Rapiers were assigned to other pilots, especially when they heard their next mission briefing. Halcyon ordered them to check out a large group of bogies at Nav 2, flying the heavy Raptor.

Hours later, I found Spirit sitting in the library, halfheartedly scrolling through the latest issue of the *Global News*. I could tell she was distracted, but walked over and sat down anyway.

"It is the first time I have ever turned the blue flames of my exhaust toward the enemy and run, Prankster," she lamented. "Even though I destroyed Dakhath, and completed the mission according to orders, I feel I have failed.

"We ran into nine Dralthi separated into two wings. We handled the first group with ease, but then I heard Dakhath boasting of his ability to destroy me. I know he stays with a single target until it explodes, and I could tell that Angel had her hands full with the four other Dralthi. I had to engage.

"Dakhath loves missiles and the first came toward me as I turned to put him in my crosshairs. I punched the afterburners and rolled right to avoid the explosive, and was out of position to avoid the first shots of his laser cannon. My rear shields were quite low. I was concentrating so much on Dakhath that I didn't notice the Dralthi on my tail until the cockpit shook with the impact of still more laser fire. My computer and communications systems were damaged.

"I just had to stay with Dakhath and hope the armor and my own gyrations as I chased him would keep me alive as the other Dralthi continued their assault." Spirit paused and brushed a wisp of hair away before proceeding with her story.

"I weakened Dakhath's rear shield with a Javelin HS and stayed on him with full guns. When he pulled away, I switched to mass driver and saw debris through the glass. The other Dralthi were hammering me, and my missile system was destroyed, but two more shots with the neutron and Dakhath started screaming. I couldn't tell if he ejected or not. His demise cost valuable time, and by the time I turned to help Angel, she was ordering me to form on her wing and run back to the *Claw*. I had to comply. We had simply taken too much damage."

"I just heard that an assault on a Kilrathi base in Brimstone was thwarted. It adds to my sorrow. I hope my failure didn't contribute to the loss of human lives there."

Gimle System Mission 3 Tau Wing

Wingman: Angel
Ship: Raptor

Mission Hints and Synopsis:

1. Nine Dralthi — one is Kilrathi ace Dakhath — attack in two separate wings. If you can make it through the first wing and take out the ace, keep fighting. If you are heavily damaged, run for home to get the information on the enemy to Colonel Halcyon.

2. Use your afterburners frequently to avoid the lasers from so many enemies. It's tough to take out a Dralthi with a missile unless you've already weakened their shields with your mass driver and laser guns.

Brimstone System

Mission 1

Alpha Wing

The twitch at the corner of the Colonel's mouth betrayed his anxiety. I could tell the failed sabotage operation was squeezing the Confederation's resources in Brimstone System. Unsure of the strength of Kilrathi forces, Halcyon ordered Alpha Wing to gather intelligence on the enemy forces on the second planet. Then he dropped a bomb.

"Maniac is your wingman, Prankster."

The normal rustling in the briefing room was stilled. Everyone knew my feelings about the cocky redhead, and, to add insult to injury, it was my first mission without a veteran guarding my wing. I started to protest, but decided I was still too new to the *Claw* to start griping about an assignment.

"How much trouble can he cause?" I wondered.

Maniac sighted the enemy about 15,000 km from Nav 1. He notified me, hit full afterburners, and rolled into an attack on a single Salthi before I could respond.

"Keep formation!" I screamed. He kept racing away.

"Form on my wing!" I was frantic, knowing the colonel didn't want us to engage unless it was unavoidable.

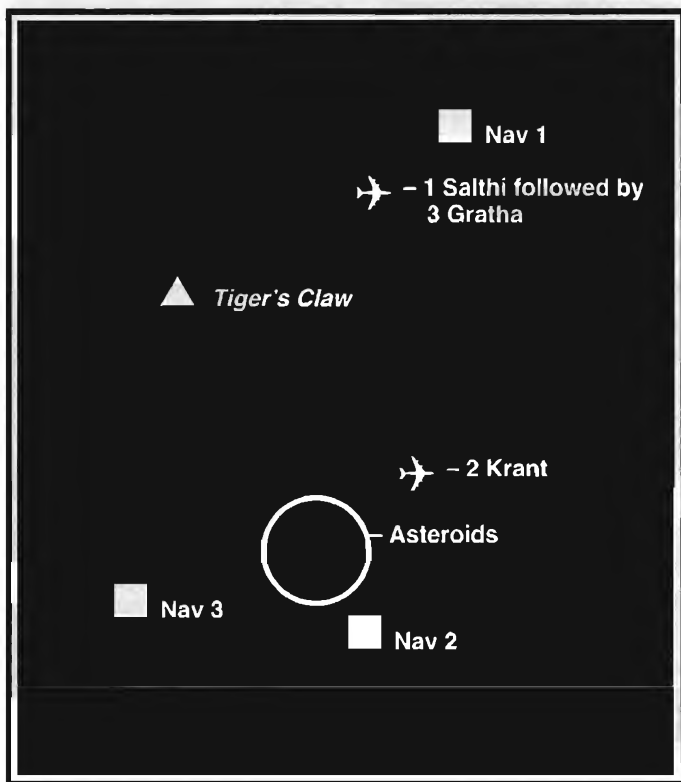
"No way, Lieutenant," was Maniac's only reply. I ordered him back to the base, but knew he wouldn't respond.

I wanted to leave Maniac to his own devices and blast away to the first Nav point, but I knew the Confederation needed every ship for the battles to come ... and every pilot, no matter how undisciplined.

I broke to the left, rolled hard and headed for Maniac's target. New blips appeared on the radar screen. I kept them on the left of my viewscreen and circled to the right. I figured Maniac could handle a single Salthi, and I could try to sneak in behind the approaching wing.

Just as I discovered it was three Gratha, Maniac whooped and said he had obliterated his target. When I take

Wingman: Maniac
Ship: Scimitar



on a heavy fighter like a Gratha from the cockpit of a Scimitar, I need my wingman's guns. *If you're ever going to take an order, I prayed, take this one, Maniac.*

I locked on to the trailing Gratha and ordered Maniac to attack my target. Surprisingly, he complied, and now we had two mass-driver cannons to work with. I launched a Dart, and watched the target break to avoid the explosive warhead. The Gratha was in perfect position for a kill, and I have to admit, Maniac's guns were honed. The right VDU showed that the enemy's shields were down, and after my first shot with the Gatling, the pilot ejected.

I ordered Maniac to break and attack since we were now one-on-one with the enemy. We stayed on the afterburners and crowded the Gratha until our mass drivers could weaken the shields and set up a score with the heat-seekers.

I was elated with our success, but infuriated by Maniac's senseless attack. Our damage was light, but enough to threaten the rest of the mission.

The two Krant came out of nowhere. I didn't even see them, but I knew there was trouble when Maniac left formation. I didn't bother trying to stop him.

I knew the battle would turn on the strength of our mass drivers against the range of the Krant's lasers. Avoid damage at long range, I thought, and we could hold our own in tight. It wasn't as much of an advantage as I thought.

I wasn't sure we would survive. My eject warning sounded and I was close to punching out, but a review of the damage display made me think I could hang on for a few more passes. I just concentrated on staying close to the Krant and using my mass drivers to weaken the rear shields. It looked like one of those old movies of race cars drafting one another at Indianapolis. I tried to stay within 100 meters so the Krant couldn't turn quickly and return fire. It worked, and the first Krant flew into a thousand pieces when a Javelin hit. With Maniac and I hammering the second fighter, it didn't last much longer.

Back at the *Claw*, I stormed into Halcyon's office and reported Maniac's lack of discipline. I screamed for court martial proceedings for disobeying a direct order. I wanted him hung from the highest yardarm, if we could just find a yardarm in space. "I'd like to honor both your requests," the colonel said, "but we need every pilot — even the independent ones."

Mission Hints and Synopsis:

1. While your mission is to gather intelligence only, Maniac forces a confrontation when a single Salthi appears about 15,000 kilometers from Nav 1.
2. Three Gratha quickly follow and attack. Tell Maniac to "attack my target," and try to circle behind the approaching wing. Stay close with frequent use of your afterburners and use your mass driver.
3. Two Krant attack between Nav 1 and Nav 2. They're tough, but at least the odds are even. Weaken the shields with your mass driver, then launch a Javelin (from the rear) or Dart dumb-fire.

Brimstone System
Mission 2
Theta Wing

Wingman: Maniac
Ship: Scimitar

I waited near the rear of the briefing room, hoping to find Maniac before Colonel Halcyon entered. He found me instead.

"Hey, Prankster," he said, loud enough for everyone to hear. "Try to keep up today, will ya? I had to lead you to every enemy ship yesterday. I'm gettin' tired of carrying you." He wasn't looking at me, but grinning at the rest of the assembled pilots, who were now crowding around.

He was trying to get my goat ... and succeeding. "You aren't fooling anybody, Maniac," I said. "You disobeyed a direct order yesterday and put the mission, and me, in jeopardy with your grandstanding. You can really fly, but there isn't a pilot in the Killer Bee squadron who wants you on their wing."

"Holy hairballs, Prankster! I was just kiddin' around," he waived. "You don't have to make it personal."

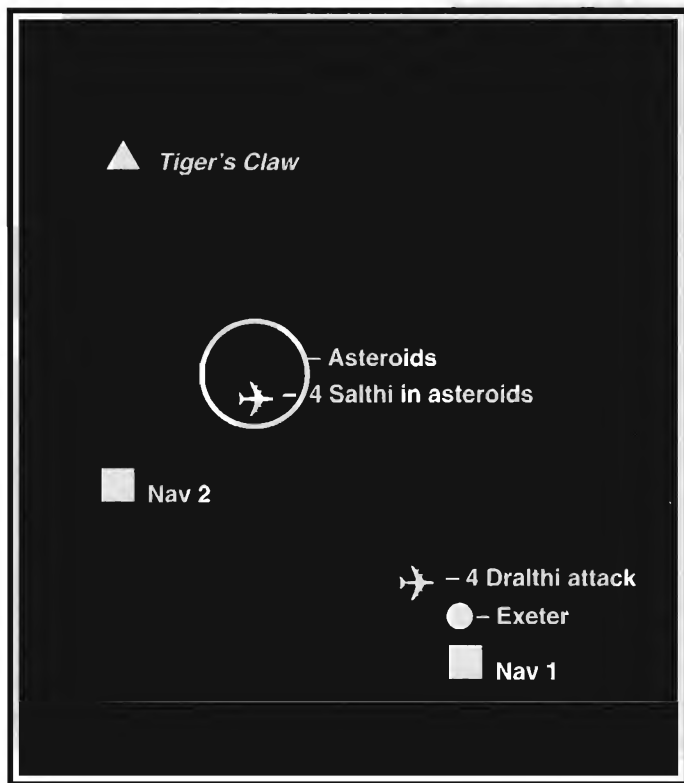
Halcyon entered and cut the conversation short. "We're gearing up for a major assault on Kilrathi bases in the system," he said. "HQ is sending in extra warships and we're going to escort them back to the *Tiger's Claw* for rendezvous."

Maniac and I would fly Scimitars again and meet an Exeter-class destroyer at Nav 1. We would return via Nav 2 to avoid a dense asteroid field. I just hoped Maniac had learned a lesson.

We were cruising on autopilot, about 38,000 kilometers from Nav 1, when the first asteroids appeared. I set velocity at 250 KPS and prepared for the slow, twisting ride. "Just another headache to make a bad day worse," I thought. It wasn't going to get any better.

Maniac spotted the Salthi while we were still dodging rocks. I ordered a break and attack, knowing I probably didn't have to, and turned my attention to the enemy. "Dogfighting in a rock pile had better be the same as in the sim," I muttered.

I fought the impulse to increase speed and worked my way to the



right. I had set speed to 150 and rolled left, when I saw the first flash from the Salthi's guns. I tapped the afterburner and squirted to the right to avoid incoming fire. I hit all stop, rotated left until the lead fighter was targeted, and launched a dumb-fire. Setting speed back to 150, I burned again. It doesn't pay to stand still for long.

The missile missed, but broke up the Salthi formation. I throttled to 250 KPS and targeted the closest Salthi. I didn't want to lose him in the debris or confusion, so I locked the target and fired a two-shot burst. The key to asteroid combat turned out to be patience. It was slow, but taking down their shields with guns and then using the heat-seekers brought two down. The others succumbed to our mass-drivers. We just pressed when we had full blaster power and shields, and played keep-away otherwise.

We were almost to Nav 1 when the Dralhti showed up, heading right for the Exeter. We went to full speed, but by the time we caught up they were already hitting the destroyer. Screaming to break and attack, I went after the target nearest the capital ship.

It was good to be in open space again, and I pushed my advantage with the mass drivers. When the Dralhti turned and ran, I just stayed on his tail with the afterburners and blasted away. He went down immediately.

I taunted each of the remaining ships and all but one turned to attack me. I went after the one that didn't, and told Maniac to attack my target. He was right there, and it worked just like I planned. While the others were trying to get to our rear, our combined guns took out the ship that was still attacking the Exeter. With the odds evened up a little, the rest of the Dralhti wing wouldn't last long. I told Maniac to break and attack.

We continued to Nav 1 on a short recon of the area, then fell in behind the destroyer and cut our throttles to match her 100-KPS cruising velocity. It was a slow, but uneventful, trip back to the *Tiger's Claw*. That's the best kind.

I was almost impressed with Maniac this time. He'd followed orders, protected my wing, and eliminated a couple of bad guys. I couldn't have asked for more. I mentioned it to him on the way to our debriefing with the Colonel. "Were you talking to me out there?" he asked. "I was just finding a target and headin' for it." I couldn't tell if he was kidding or not.

Mission Hints and Synopsis:

1. Four Salthi appear in the asteroids before Nav 1. Be patient, keep speed at 250 or less, and take advantage of your heat-seeking missiles.
2. Four Dralhti attack the Exeter. Use taunts to draw some away, but go after the ones that don't respond to your insults first. It's the easiest way to protect the Exeter.
3. Make sure you hit all your Nav points.
4. Set speed to 100 to match the speed of the Exeter and escort her back to the carrier.

Brimstone System

Mission 3

Rho Wing

Maniac and I headed to Nav 1 to take out a Dorkir sport and her fighter escort. Confederation warships were pounding the Kilrathi bases in Brimstone, and stopping their freighters from delivering any new supplies was vital.

I kept thinking of Iceman's advice to hit them from the rear and Bossman's suggestion to take out the fighter wings before going after the larger Kilrathi ships. I was also concerned with Maniac flying on my wing, when he called out that two bogies had appeared.

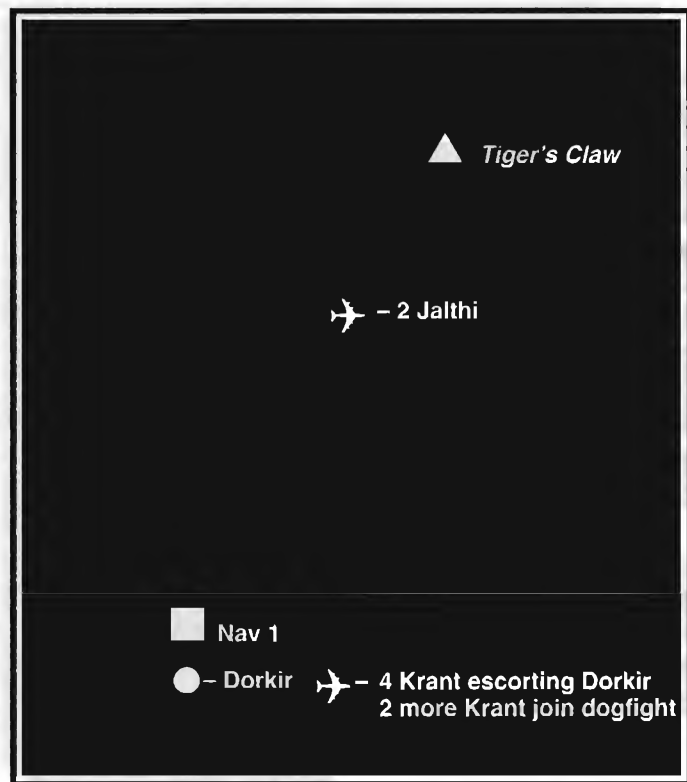
"How did Intel miss these guys?" I said to myself. "We aren't even close to the Dorkir yet." In fact, we were still 42,000 kilometers from the capital ship and I doubted these guys were an escort. Just dumb luck that they'd found us.

They were Jalthi and packed a lot of firepower. A straight-on approach was out as we faced six neutron guns and six laser cannons from only two enemy ships. "Break and attack!" I screamed at Maniac.

Wingman: Maniac
Ship: Scimitar

I ran the throttle up to 360 KPS and kept my thumb on the afterburner switch. I knew we had to steer clear of all those guns and get to their rear shields. The first shots of the battle rocketed toward me. It looked like a whole wing of Salthi were shooting, but these were much more powerful neutrons.

I hit the afterburners, rolled right, and went into a hard left turn. It was the quickest way to slide above them. Then I yanked the stick right and almost slammed right into the enemy ships. I kept jockeying for position, and almost collided two more times. Finally I figured out a pattern to their movements and slowed down when they approached from either side, then hit the afterburners to stay on their rear end when they raced away. That did it. Maniac dropped one with his mass drivers, while I took down the shields and weakened the armor with the guns and finished off the last



enemy with a Javelin. Missiles alone wouldn't have done the job unless I'd used my entire inventory on one ship.

When we reached the Dorkir, four Krant were protecting her. I told Maniac to attack my target when the four enemy ships spotted us and turned to defend the target. Weakest on the left and right, I knew an afterburner slide would put me into position to inflict heavy damage on more than one plane. If I locked onto the lead target, Maniac would stay with him and I could then attack the rest of the wing from the rear.

When 3000 meters separated us, I turned about 20 degrees to the left and stayed on my afterburners. At 1500 meters I turned hard to the right, bringing my nose around to target the lead Krant. While sliding, I locked onto the target and held down the fire key until my blaster power was gone. I knew I'd scored more than once, but didn't know how many ships I'd hit. As the wing raced past on my right, I spun around and followed, again hitting the afterburners.

Maniac had the locked target, so I concentrated on the others. I wasn't even thinking about the Dorkir yet. The tailing Krant turned to attack me head on, but a dumb-fire missile blasted his fore shield before he completed the maneuver. It was Khajja. Six shots from the mass driver finished him. Maniac yelled that he'd blown up his target. I ordered him to break so we'd be one-on-one with the last two Krant.

I had taken some damage before we finished off the last of the escort wing with our Gatlings. I swung around to approach the Dorkir from the rear. At 2000 meters I launched my last Dart and hit backspace to stop and keep my position. As soon as the Dart hit, I slammed the throttle to full and jumped on the fire button when I hit 1500 meters. I broke right at 1000 meters and hit the afterburners to avoid the turreted lasers. After repeating the maneuver two more times, the Dorkir was orbiting Vega as a thousand shards of metal and tyrilium.

We'd completed the objective and I was proud. Two Jalthi, four Krant, and a Dorkir were the toughest assignment I'd pulled so far. Two more Krant tried to slow us up on the way to the *Tiger's Claw*, but our ships had made repairs and regenerated shields. It wasn't that tough a fight, although Maniac reported damage to his computer system before we finished. I was ready to get away from Brimstone.

Mission Hints and Synopsis:

1. Two Jalthi attack 42,000 kilometers from Nav 1. Break and attack and make sure you avoid the first pass by the heavy fighters. Position is the key, since they can take you out quickly if they get an advantage. Watch your speed to avoid collisions. Jalthi can only hit 280 KPS.
2. Four Krant guard the Dorkir, Khajja included. All your weapons come in handy, but don't rely on missiles alone to do the job. Use your neutrons.
3. The Dorkir's easy if you keep hitting him from the rear.

Cheng-Du System Mission 1 Epsilon Wing

I wasn't around for the missions in the Cheng-Du System. Halcyon had sent me to HQ for a few days, where I helped out with the training of some new pilots. On my return, I looked over the mission reports of pilots who had flown while I was away.

Pilots: Major James Taggart, Wingleader
Captain Jeannette Devereaux

Ship Type: Hornet

Mission: Hornet Valkyrie approaching with Krant on her tail. Hornet's computer contains vital information concerning the position of a Ralari destroyer. Rendezvous with Hornet and cover retreat to *Tiger's Claw*.

Wingman: Angel
Ship: Hornet

Synopsis: Four Krant attacking Valkyrie at rendezvous. Taunted all enemy targets. Three responded and attacked our fighters, while the fourth Krant continued its assault on the Valkyrie.

Called "attack my target" and turned to protect the light fighter from the single attacker.

Devereaux approached from the right, I headed straight in with afterburners firing. Ignored threat from three following Krant and took out the target with combined laser cannon fire. Impossible to credit the kill to one pilot or the other.

Changed to "break and attack" to engage the rest of the Krant. All started to run. Weakened rear shield of trailing Krant with lasers, then destroyed target with Spiculum IR missiles. Last two Krant allowed to retreat.

Fell into position behind Valkyrie and proceeded on autopilot to the *Tiger's Claw*. Mission accomplished.

■ Nav 1/Hornets

✈ - 4 Krant attacking the Valkyrie

▲ *Tiger's Claw*

Pilots: Major James Taggart, Wingleader
Captain Jeannette Devereaux

Ship Type: Hornet

Cheng-Du System
Mission 2
Iota Wing

Mission: A confederation transport is headed for the Ymir System. Escort the Exeter to Nav 1 and wait for her to jump before returning to the *Tiger's Claw*. Kilrathi fighter wings are known to be present in the system.

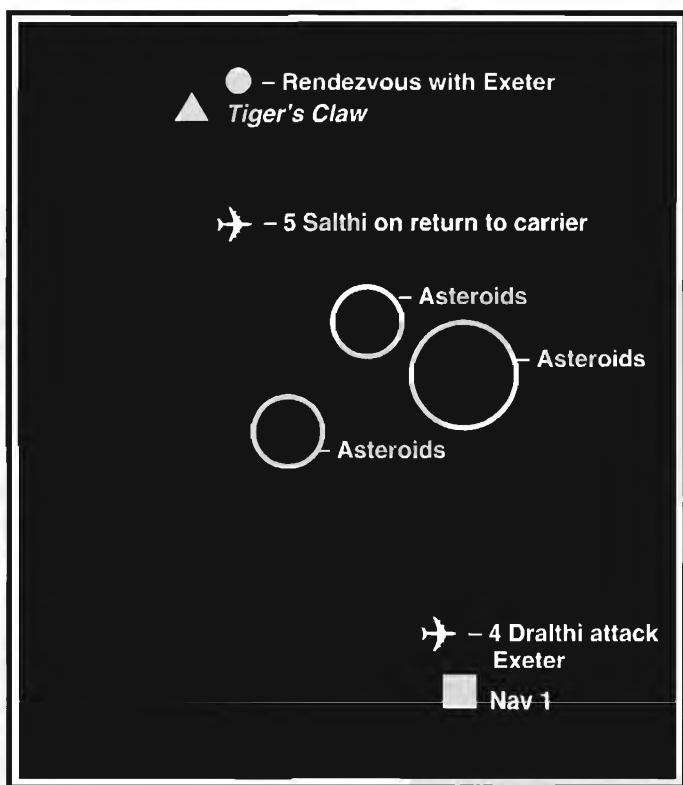
Synopsis: Took position behind Exeter and set speed to 100 KPS to match destroyer's cruise velocity. Heavy asteroid field encountered 6000 kilometers from Nav 1. Maintained speed through asteroids, steering to the right of the Nav cursor to avoid the heaviest concentration of rocks.

Four Dralhti attacked as we approach jump point. Dakhath, the Kilrathi ace credited with 55 kills, led the wing. Targeted Dakhath and ordered Devereaux to break and attack.

Dakhath attempted to lead me away from Exeter, so I broke off and joined the Captain. After four shots to the side armor, I took out one Dralhti with a Dart and hit my afterburners. Attacking from the rear, our laser cannons took out two more Dralhti. Dakhath returned, but now there were two of us to contend with. He attempted to run, but constant afterburners kept us close and we downed him with laser cannons as well. The Exeter made a successful jump.

Five Salthi engaged on way to carrier, but the pilots weren't very skilled and we took out two with heat-seeking missiles and three with our laser cannons after evading their first pass at our position.

Wingman: Angel
Ship: Hornet



Cheng-Du System
Mission 3
Omicron Wing

Pilots: Major James Taggart, Wingleader
Captain Jeannette Devereaux

Ship Type: Hornet

Mission: Red Alert. Six Gratha are heading for the *Tiger's Claw* and two wings launch immediately to guard the carrier against imminent attack.

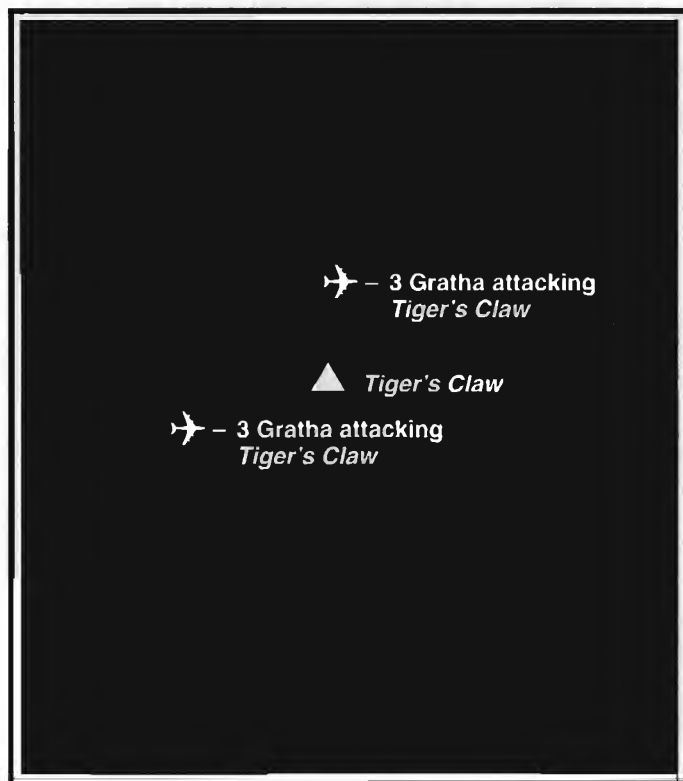
Synopsis: Immediately following launch, two wings of Gratha approach the carrier. We set speed at 420 KPS and keep formation until auto-targeting provides the range. Rolling 90 degrees, we turn toward the nearest wing and fire afterburners to hit fast and hard.

Wingman: Angel
Ship: Hornet

After calling "break and attack," I pull into an afterburner slide from the right side and let the lasers rip. I missed swinging around on the lead ship, but debris fell from the last Gratha. I bump the afterburners, nose in on the rear with the lasers, and down it.

The second Kilrathi wing approaches the carrier, so we roll, turn, and burn, and try to lock onto a target. Taunts were flying back and forth as we tried to coax the attacking planes into dog-fights. Two came out to meet us, and we hit them hard with the laser. I fired a Dart, and when the pilot turned to avoid it, hit hard with the cannon. When he turned to run, I followed and wrecked him with a Javelin HS.

The same tactic scored on another, and Angel reported success with her lasers after a long fight. I called "attack my target" and we downed the last two Gratha using just afterburners and laser fire. Sometimes I wish we could carry more missiles.



It was our first real respite from almost constant sorties. While the *Tiger's Claw* took on supplies, most of the pilots played at their computers or on the Train-Sim, drank in the bar, or slept. Knowing that things would heat up soon enough, I opted for the latter most of the time.

In one of my rare conscious moments, I was heading for the carrier's library when Major Taggart stopped me.

"We need to talk, Prankster. I know you aren't really friends, but you know Maniac better than anyone in the fleet. You went to the academy together."

Paladin stopped and seemed to be searching for what to say next. I thought I knew what was coming.

"Nothing's happened yet, but we're all worried about flying with Maniac. He can wiggle a joystick well enough, but he just doesn't understand the role of a wingman ... or chooses to ignore it. We're considering an official report to Colonel Halcyon and asking for an evaluation. We thought you might try to talk to him first."

This was all I needed. After the last two missions I'd flown with the redhead, I thought he had straightened out. I guess it's all relative.

"I'll give it a try Major, but no guarantees. About all we've ever done is put up with each other," I explained.

I found Maniac in the bar, telling stories to a couple of techs from the comm room. He agreed to meet me later.

"There's only one way to say it, Maniac. The rest of the pilots want you grounded and they're ready to go to Halcyon. According to them, you're unsafe and unreliable. They asked me to talk to you. This discussion is your last chance," I noted.

"Damn, Prankster, you don't have to sugarcoat it. Just give it to me straight." Maniac was grinning. "I'm sorry, I was just trying to change the atmosphere a little bit. Seriously, they said that? I can't believe it. I know I've taken off on my own a few times, but we've completed every mission and not one wingleader's been hurt."

"Tell 'em I'm okay, will ya? I can't stand the thought of staying on the carrier while everyone else flies. I'll change, buddy. You'll see. I'll be the best wingman in the fleet, everything right by the book. Just one more chance is all I ask."

I was almost embarrassed for him. I told Maniac I'd ask Iceman to give him another try and that it had better work out."

Dakota System
Mission 1
Gamma Wing

I was looking forward to flying Raptors with Captain Khumalo. He didn't have a reputation as a leader, but Knight starred in the role of wingman. He was steady, always in position, and didn't make mental mistakes.

We were covering medical transports as they delivered a new Watson's Disease vaccine to the settlers in Fargo Colony. We'd escort one Drayman to its jump point, then cover another on the way back to rendezvous with the *Tiger's Claw*.

We'd fallen into escort position, set our speed at 100 KPS to stay on the Drayman, and just set the autopilot when Knight spotted them. It was four Jalathi. I felt the hair on the back of my neck bristle. I ordered Knight to hit my target and we immediately maxed out the throttles.

The wave came straight in and I rolled left to get ready to punch the burners and try to slide above them. As soon as I saw their lasers, I fired two quick shots with the mass driver and immediately switched the setting to neutrons. I fired the burners and yanked the stick left. I was sliding too much and couldn't get

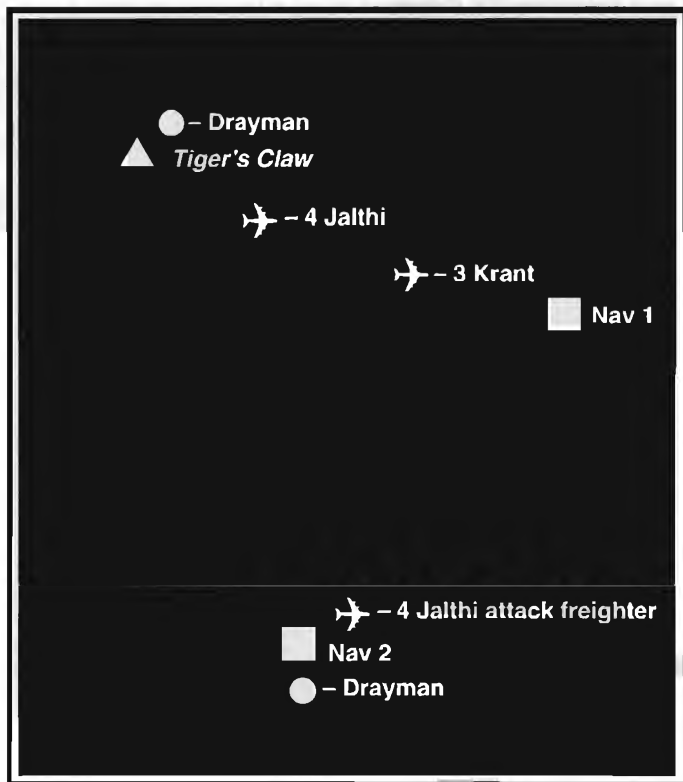
into position to fire when they swept right under me. I burned again, rolled, and turned right and started the chase.

Knight fired first, sending full guns right up a Jalathi's pipes. I followed with two good shots from the neutrons, then caught him with two more shots as he turned. It was all over for that one. Now it was really getting crazy.

I had a Jalathi on my tail and it looked like my shields were in trouble. I dropped a Porcupine, rapped on the burner switch, and told Knight to break and attack. Then I pulled right just as hard as I could go and looked for the Drayman. It was under fire.

Knight was moving in from the right, so I broke left and started calling the cats whatever I could think of to really get under their skin. I could see Knight evading a missile and looping back on the sender.

Wingman: Knight
Ship: Raptor



They were still pretty far away, but I lined up and sent a Dart in just to keep them on their toes. "Even if it doesn't score, it'll definitely get their attention," I thought.

I was on full afterburners when I raced by the three Jalthi and almost splattered my fighter on the Drayman. It was close, but actually gave me an edge when I continued around the large ship and caught a Jalthi coming the other way. I switched to full guns and, at full blaster power, lit him up. He tried to run, but when the blaster was repowered, I was ready and he was down. The other two were already heading away when I turned. The Drayman was still on course.

The jump point was less than 7500 kilometers away when the Krant decided to ruin our day. They were close when we saw them, and we broke into an attack. I went to full guns and just concentrated on making every shot count. Sometimes it's tough to hold your fire until you're sure of a shot on target, but it's the only way to use full guns.

One cartwheeled before exploding when I caught it with four in a row to the side and followed with a Spiculum IR that barely got out of the tube before it hit him. Knight called for help and I raced over to help, shadowed by the third Krant.

I saw the one hitting Knight and altered course to come in from the rear. The Krant behind hit me with a burst, so I popped the afterburners and made a quarter-turn left for a little slide. I switched to neutrons and thumbed the fire button as I crossed behind the Krant on Knight. I hit him two or three times and noticed the damage in the right VDU. A quick turn and a Javelin and he was gone. I started to tell Knight to hit my target when I saw him already on the way. Two missiles and three hits from full guns, and the last Krant was toast. The Drayman jumped while we fought.

Four more Jalthi flared up just as we moved into position on Nav 2. We just stayed with the second Drayman, used our taunts and fought a smart fight. We were patient with the guns, waited until we had position, and made use of every weapon in our arsenal. I even finished one off with the mass drivers at almost 3000 meters. Just lucky, I guess.

I'd been real lucky. Until I hit the hangar, I didn't realize how many shots had hit me without taking out any major systems. Still, the mechs would be busy tonight.

Mission Hints and Synopsis:

1. Slow speed to stay with the Drayman, then use sliding maneuvers to avoid the Jalthi's first attack. Full or neutron guns from the rear and save your blaster power until you have an easy shot.

2. Three Krant can be taken out by using guns to weaken and then missiles for final shot. Stay with the Drayman!

3. Four Jalthi pilots are susceptible to taunts to keep them away from the Drayman. Don't try to hit them from the front — they'll tear you up in a head-to-head matchup.

Dakota System
Mission 2
Lambda Wing

This was a mission I could enjoy. Just fly a three-point patrol and report back to the *Tiger's Claw*. Halcyon didn't say not to engage, but he didn't order it either. I wasn't looking for trouble, and almost wished we were flying the quick Hornets instead of the heavy Raptors.

Knight and I weren't far from Nav 1 when we hit the asteroid belt and immediately set speed to 250 KPS.

"Looks like it's going to be a long day, Captain. Keep formation," I called.

We were sneaking through the rocks when Khumalo noticed two Gratha on the radar display. They were heading our way. Knight wanted to attack, but I was hoping we could avoid a confrontation. We couldn't.

The first Gratha launched a missile and came straight at us. I told Knight to break and attack, since I wanted to give him some flexibility as we worked around the asteroids. I switched to the powerful neutron gun and broke left to avoid a looming asteroid.

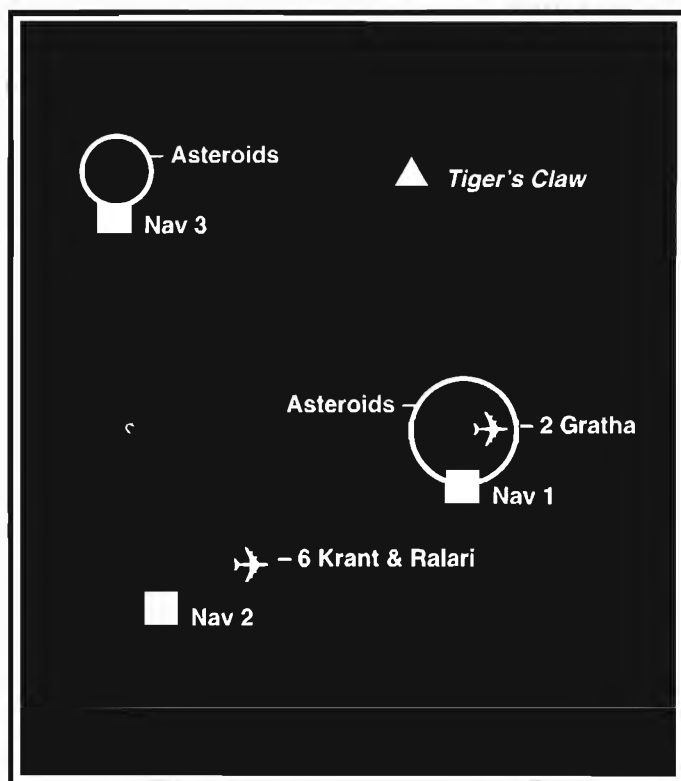
The Gratha were moving faster than we were and trying to use their speed to gain position. While I often blast asteroids with my guns instead of dodging them, during combat I wanted to make sure my blaster power stayed near the max level.

"Patience is the key to this battle," I said to myself.

I couldn't use my afterburners effectively in the dense field, but I did employ occasional bursts of speed during the dogfight. I always returned to 250 KPS, however. Knight was holding his own with one of the Kilrathi ships, but I had already taken heavy damage from my opponent's lasers and mass drivers.

I got a break when the Gratha crossed in front of me and turned toward Knight. He must have thought I was out of commission, but I chased him with my neutrons and finally locked on with a Javelin HS. Somehow, the missile avoided all the aster-

Wingman: Knight
Ship: Raptor



oids and rocked the rear of the Gratha. It was almost enough to take him out. One more neutron and he was done. Meanwhile, I watched as Knight chased his quarry into the asteroids and managed a kill without firing a shot. In his panic, the Gratha pilot had hit a large asteroid head-on. We escaped from the asteroid belt and made it to Nav 1 without any more problems.

We saw the Krant when we were about 18,000 kilometers from Nav 2. Telling Knight to keep radio silence, I hit the afterburners and headed to the right of the targets. It was no use. That easy mission had become a dream. The Krant pilots weren't the most seasoned in the Kilrathi force, because they just headed straight in. We broke and attacked, coming in from the right and left with our neutron guns blazing. Sliding with our afterburners, we took out two, quickly hitting their weak side shields. I told Knight to attack my target, and worked until I was behind and to the left of the third Krant. I hit him three times with full guns and launched a Pilum Friend-or-Foe missile when my blaster power was down. The Krant turned into shards of metal.

The last Krant was on my tail by now, so I hit the afterburners. He increased speed to follow. Then I remembered the dog-fight my roommate fought with Maniac in my plebe year. I turned slightly to the right and hit the backspace key to come to a full stop. The Krant rushed by, and I just rotated and hit him with full guns. Then I burned again to follow and took him down with continued gunfire.

By this time, new enemy targets had appeared on radar. A fighter escort and capital ship. This time I didn't want to avoid a fight, I wanted that destroyer. The fighter escort didn't last long. Knight and I kept to the guns so we could save missiles for the Ralari. It was a good strategy.

With both of us attacking, I turned at full speed to approach the Ralari from the rear. At 3000 meters I launched a dumb-fire, then waited for it to hit before hitting hard with full guns. At 1000 meters, I broke left and circled to hit the Ralari again, but I was too quick and almost collided with the large ship. I'd learned a lesson, and next time I hit the afterburners to give me some distance before turning back and attacking from the rear again. Without a fighter escort for protection, the Ralari exploded.

Now the mission turned into what I had expected. We didn't hit any enemies at Nav 2 or Nav 3, although we were slowed by asteroids on the way back to the *Claw*. Mission accomplished.

Mission Hints and Synopsis:

1. Two Gratha attack in the asteroid field 10,000 kilometers from Nav 1. Use neutron guns and stay at 250 KPS.
2. Four Krant appear about 18,000 kilometers from Nav 2. Pilums work well against the enemy, but keep track of your wingman before launching.
3. A Ralari with Krant escort shows up at 10,000 kilometers from Nav 2. Take out the Krant with guns, then use missiles and full guns to take out the Ralari from the rear.
4. Asteroids at Nav 3. Keep speed at 250 KPS.

Dakota System Mission 3 Epsilon Wing

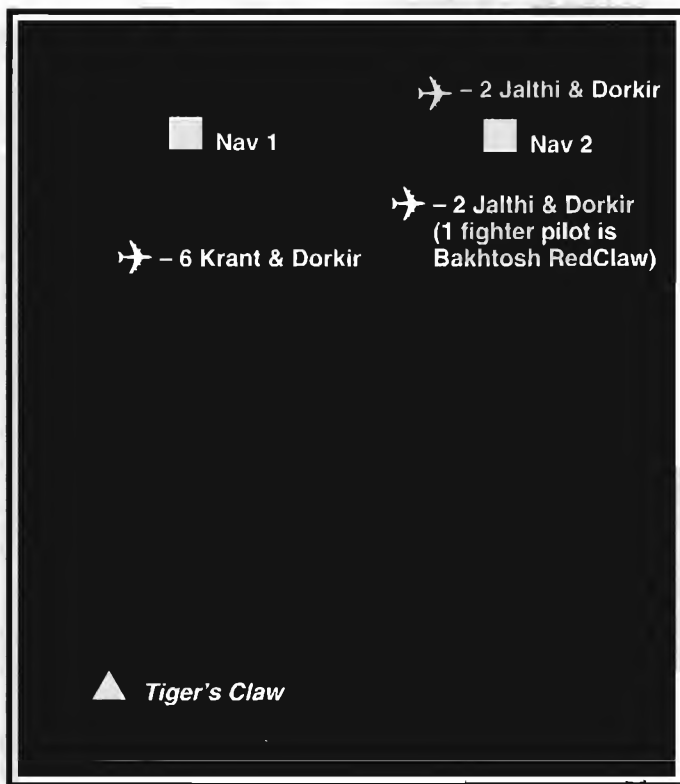
Colonel Halcyon was all business at the mission briefing. An enormous Kilrathi convoy was moving into attack range, and we were immediately launching 20 fighter wings to head them off. The orders were simple: seek and destroy.

Knight and I were Epsilon Wing, and were ordered to hit Kilrathi sports at two different jump points. The kicker was that Bakhtosh RedClaw, the deadliest shot in the Kilrathi Navy, was known to be leading the escort fighters in the convoy. One of the wings was sure to run into him. I hoped it wouldn't be us, but had a funny feeling as we hit autopilot and headed for the Dorkir.

Knight was a little too talkative for my mood, so I told him to maintain radio silence. I jumped when the enemy appeared on the radar screen. The Dorkir was there, with a substantial escort of fighters. Autotargeting indicated that all the fighters were Krant, and there were six of them — more than I had ever engaged in a single dogfight before.

I called a break and attack and kept one finger on the afterburner fire button. I maxed out the throttles and headed to the

Wingman: Knight
Ship: Raptor



right of the first fighter wing. I knew that sliding maneuvers using full afterburners and a turn to one side would be our only chance against such a large force. We had to avoid incoming fire and inflict heavy damage quickly.

After one of the longest dogfights I had ever fought, we had taken out the six Krant without firing any missiles. Our strategy was simple. Whenever we saw incoming gunfire, we punched the afterburners and started a slide. We never fired at long range, trying to keep blaster power up, but fired the neutrons and full guns only when we had a sure target. Our patience paid off, since the Dorkir was a sitting duck for our combined missiles and guns. It was probably a moot point, but I ordered Knight to attack my target and rolled in on the rear of the Dorkir for my standard attack.

We were feeling good. I never thought we could take on such a large force and get away without internal damage, but we had. It was a good thing it worked out that way. Bakhtosh was next.

"I'll blast you into an early grave in the black void of space," RedClaw transmitted, and immediately fired the lasers from his six gun ports. We were almost to Nav 1 by now, and Bakhtosh and another Jalthi pilot were protecting the freighter.

I rolled right to present a minimum profile, yanked the stick right, and hit the afterburners. The Raptor's shields couldn't handle a frontal assault from the Jalthi guns, so I wanted out of there. One of his lasers connected before I completed the maneuver and my front shields were weakened. I targeted RedClaw, locked on, and ordered Knight to attack him as well. I wanted all our guns to stay on RedClaw and prevent him from performing repairs or regenerating shields when we did score.

Bakhtosh headed away from the Dorkir and we were hot on his tail. The second Jalthi was approaching from the right, so I hit the afterburners again and turned quickly left and right to set up evasive slides while still staying on RedClaw's rear. We kept jockeying for position, with RedClaw trying to keep his distance and take advantage of his firepower, and us trying to stay close and use our speed advantage when he turned to run. Knight's missiles weakened his shields and I ordered a break and attack so my wingman could head for the other target. I thought I could handle the rest of RedClaw myself.

I was mirroring every move RedClaw made, but was too far away to do any damage. I wanted to shoot, but held back to maintain blaster power until I could get close. I caught him as he turned back to attack, and, hitting the afterburners, I traded a few punches before he went down. My computer was in trouble and my missile launch system was destroyed, but I turned and helped Knight take out the second Jalthi with the guns. In minutes, the Dorkir was toast, using just gunfire from the rear.

We were really working well as a team, and the next target, two more Jalthi and another Dorkir, weren't as tough as the group we'd just fought.

I'd really learned some lessons on this mission. In the bar, Knight and I made sure to tell Shotglass how valuable it was to keep one hand on the afterburners at all times and just keep sliding to avoid enemy fire. We knew that everyone would get the word before the night was over.

Mission Hints and Synopsis:

1. Six Krant are protecting a Dorkir about 15,000 kilometers from Nav 1. Use afterburners frequently to evade Krant, and neutrons or full guns during your attack.
2. Dorkirs are vulnerable to a rear attack. Hit them hard with missiles, then follow up with the guns. Keep blaster power up and fire quickly at close range.
3. Bakhtosh RedClaw will try to pound you from a distance. Don't give him the chance. Crowd the Jalthi and use offensive sliding maneuvers.

Port Hedland Mission 1 Eta Wing

I had pulled one of those thrilling “flying bus” assignments while we were in the Port Hedland system. Instead of cruising in a Scimitar, I was moving fuel in a Drayman to Planck’s Star, where a Kilrathi destroyer had decimated the storage facilities. With pilots at a premium, it was absolutely necessary, but extremely boring.

Spirit and Knight formed Eta Wing and flew the most dangerous assignments in the system. When I returned to the carrier, I made a point to meet with them and talk about their missions. Flying those “buses,” it was easy to lose your fighter-pilot edge. By keeping up with the action on the *Claw*, I could at least try to hold onto some of it.

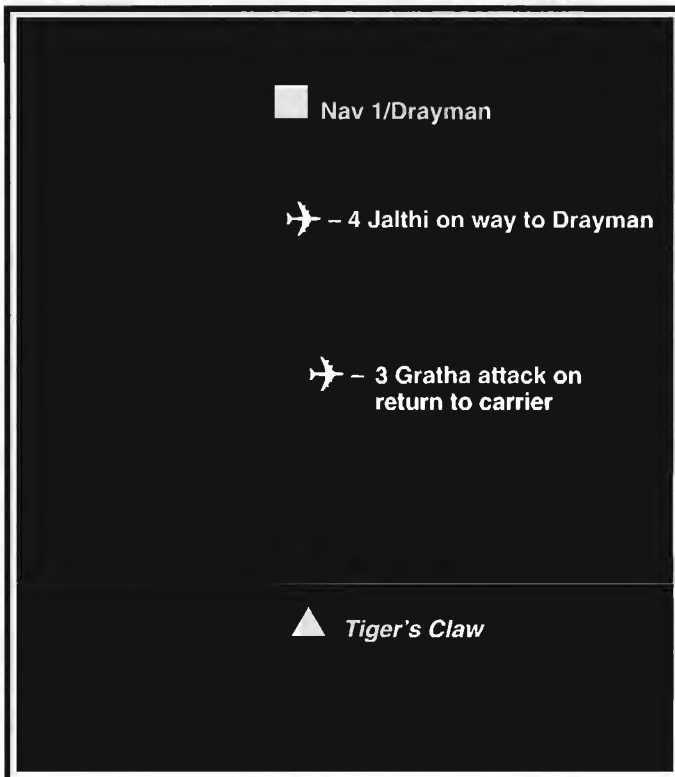
“I was more concerned about the success of this mission than any other I had flown,” recalled Spirit. “On most defensive sorties, I protect ships manned only by military personnel. The Drayman I would escort back to the carrier, though, held a TCSO troupe of entertainers. These were civilians, and I felt a special sense of responsibility. Their safety was paramount, and failure would have crushed morale on the *Tiger’s Claw*.”

Knight remembered the first dog-fight on the mission. “Two wings of Jalathi came out of an ion cloud right away. It was only four fighters, but their firepower was more than you’d find in twelve Gratha ... and the Jalathi are the only Kilrathi fighters who sport neutrons. I was petrified,” he added.

“The two wings came at us from the left and right,” Spirit said. “My strategy was to try and take one out as soon as possible. I wanted to even up the odds, so I told Knight to attack my target. We headed right, toward the nearest wing, with our afterburners running hot. I was hoping to circle behind them and hit the trailing Jalathi from the rear.”

“The Jalathi saw us before we could really get behind them, but we were

Wingman: Knight
Ship: Scimitar



really moving and with a few twists, turns, and rolls, we stayed away from their guns on the first pass," Knight recollected. "I was on full guns and I think Spirit had armed the neutrons. I followed her in as she rolled right, turned hard left, and blasted away at the engine ports of the Jalathi. I almost collided with a chunk of debris, and launched a Javelin that almost sent the pilot into convulsions. The Javelin missed, but we hammered the rear of the plane and it erupted. The rest of the dogfight was just standard tactics against the Jalathi. Break and attack. Slide away with the afterburners, and make every shot count."

"We hit Nav 1 and the Drayman immediately jumped into the system," Spirit said. "We had the jump point all to ourselves and glided into position behind the transport and set speed to 150 KPS. The Drayman wouldn't waste any time in getting to the carrier. It would cruise at max velocity.

"Three Gratha made a beeline for the Drayman when we were still 55,000 kilometers from the carrier. We were too far away to count on any assistance. I taunted all three, called break and attack, and tried to lead them away from the transport.

"Knight and I were at full speed and I almost collided with one of the two Gratha who had answered our insults. That's when I slowed to 300 KPS. I wanted to be able to slip behind the enemy targets when they turned off after an attack. I didn't want to fly right by them. I went after the ship that was still attacking the Drayman." Mariko paused to gather her thoughts.

"I'm not sure whether I hit the first with guns and then a Javelin or it was the other way around, but he went down. The Drayman was now safe, since the last two Gratha had taken a personal interest in our fighters. Knight scored with a tremendous shot with a Dart and I had to use the mass drivers to take out the third. I'd used my heat-seekers, and I'm not a very good shot with the dumb-fires I had left."

From all accounts, the TCSO show was a rousing success. The zero-gee dancers apparently turned weightlessness into a tool and wowed the crowd with their precision moves. One pilot described it as like watching a group of playful dolphins glide through the water.

I remember how miffed I was about missing the show. Saranya Carr, star of *Luna Jones*, *Jumpscout* and one of my favorite actresses, had really made an impression on everyone aboard the carrier. Oh, the sacrifices we make.

Port Hedland Mission 2 Xi Wing

"Our second mission in the system was a routine four-point patrol, but it included a chance to be the first pilot to investigate a new Kilrathi capital ship," Spirit said. "Observers on McLaren had reported the find and called it a Fralthi. Halcyon reminded us that we didn't need to engage the ship, just look it over and report back with our recorder data.

"The Dralthi that attacked near Nav 1 never knew what hit them. I don't think they were expecting company. In fact, they were dismal fighters and it might have been a Kilrathi training flight. Standard maneuvers and mass drivers did the job.

"We flew through a minefield and a few bursts sent my shield protection plummeting. When we exited the field, I cruised around until regeneration was complete.

"We saw the Fralthi and three Gratha just before we arrived at the third Nav point. The Fralthi was enormous, 500 meters from stern to bow, but it didn't take us long to realize how ponderous this giant really was.

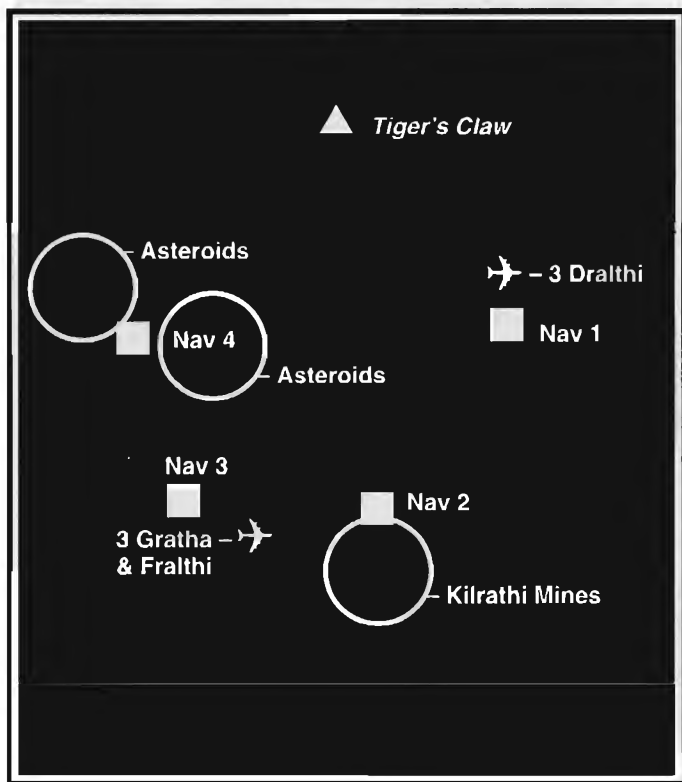
"The targets were below me, but I took our fighters down

and below them in an attempt to keep the large ship between us and the fighter escort. It would provide a close observation of the Fralthi, and give us cover as we attacked the fighter wing. I waited until the last second, then signaled a break and attack.

"We obviously surprised them. I hit the first Gratha from the side, and saw debris fall before he knew what hit him. I looped around to bring the blaster to full, and finished the job with the mass driver cannon. Knight took out the other two Gratha.

"I knew the Colonel just wanted information, but I couldn't resist the ungarded capital ship. After a few probing strikes, we discovered the shields and armor were weakest in the rear. We used all our missiles, and some gunfire as well, to destroy the ship. I was stunned that its fighter escort was so small."

Wingman: Knight
Ship: Scimitar



Port Hedland Mission 3 Tau Wing

"I was hoarse after the Code Red mission," Knight reminisced. "The Kilrathi were on a roll, attacking Confederation ships throughout the system. The *Claw* was our first priority, then move to help out an Exeter under attack, then on to destroy a Fralthi.

"I won't bother you with the details of each dogfight, but I was constantly screaming out insults to every Kilrathi pilot I could contact. It's only effective about 50 percent of the time, but that cuts the odds in half for the ships we're protecting. That's quite an edge, and I just hope the Kilrathi pilots never figure out how helpful their attitude is to our mission objectives.

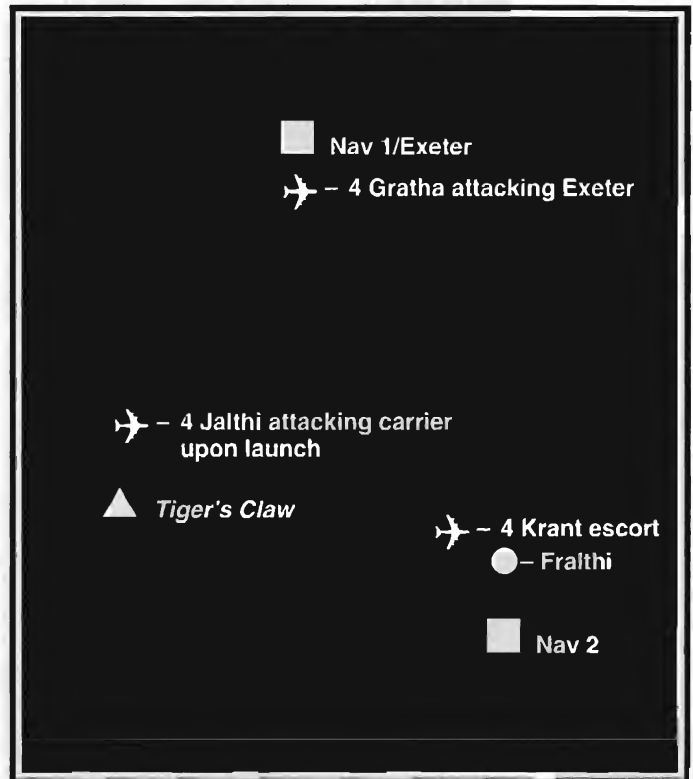
"We hit four Jalathi who were attacking the carrier, then four Gratha when we reached the Exeter. When we went after the Fralthi, we had four Krant to deal with. It was like staring at a *Joan's Fighting Spacecraft* publication but the ships moved, fired, and launched.

"It was impossible to make it through all three parts of the mission without sustaining some damage. When you're protecting ships, you often have to break away from weakened targets and go after stronger ones that are attacking. It changes your strategy.

"The Jalathi took their toll on my weapon and ion drive. I couldn't fight in one long slide, so they managed a few hits with their neutrons. By the time we made it to the Exeter, my computer system was lightly damaged and Spirit's was out. We couldn't communicate.

"We burned the Gratha around the Exeter, but when we hit the Fralthi's protectors the battle was really tough. With all our damage, we really had to fight defensively, and that really added to the time span of the dogfights. We managed to destroy the fighter wing, but not before the Fralthi jumped out of the system and escaped. The mission was only a marginal success."

Wingman: Knight
Ship: Scimitar



Kurasawa System
Mission 1
Theta Wing

It was great to be assigned to the Black Lion Squadron and finally have the chance to take the helm of a Rapier-class heavy fighter. I'd heard all about their speed, maneuverability, and armaments when Spirit and Angel had checked out prototypes in the Gimle System. I was psyched for this mission.

We were finally on the offensive in the war, and moving on Kilrathi bases after halting the enemy's advance in the Dakota System. According to Intelligence reports, the enemy was trying to ferry ships and supplies into the bases. They were preparing to make a defensive stand, but we weren't going to let them.

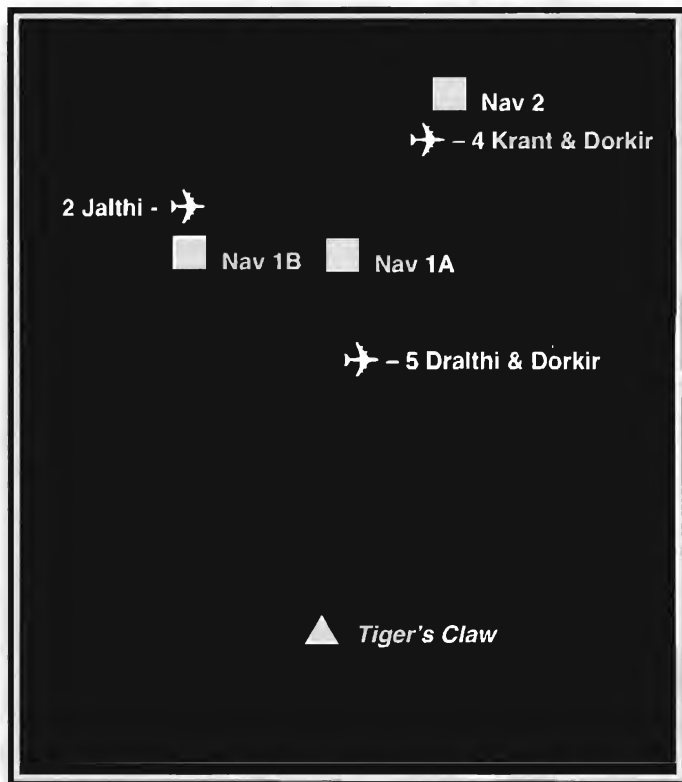
This was my first assignment with Bossman flying on my wing and I was grateful for his experience. Apparently he'd been real aggressive as a rookie, but later toned it down when young pilots were dying as they tried to emulate his tactics. Since last March, when his first daughter was born, the native of Kaohsiung, Taiwan had become even more conservative.

Wingman: Bossman
Ship: Rapier

I'd run into so many poor pilots flying the Dralhti, that I was a little complacent when we found a five-ship wing guarding a

Dorkir at Nav 1A. But these guys were hardened vets, and they gave us fits with their darting maneuvers. I couldn't believe I'd taken damage from a light fighter, but my guard was down and they scored from long range with their laser cannons before I gathered my wits about me. I won't use the excuse that I was flying a new fighter, since the Rapiers responded to the slightest touch on the joystick.

After a slow start, we realized that with full guns and better maneuverability than in a Raptor, we didn't have to play the defensive game. I ripped through the hulls of three Dralhti, and Bossman took out two once we got our act together. Normally, I always went for a rear attack, but with 7-cm fore shields and 5-cm armor in the front, I just went in from the front and blasted away with my combined lasers and neutrons.



Once the protection was destroyed, we concentrated on the Dorkir. It was like a shooting range. Always attacking these large ships from the rear, the Rapier's quick response allowed us to wait until the last second before unloading our guns and turning off to avoid a collision. At such close range, as little as 750 meters, our full guns were incredibly effective.

Nav 2 found us trading fire with four Krant who were escorting another fully laden Dorkir sport. We broke right and attacked, taking full advantage of our afterburners, lasers, full guns, and missiles. At long range, I just kept sliding to one side or the other and cutting loose with the laser. When I was close, I hit them with full guns to weaken the shields and broke out the Spiculums to deliver the *coup de grace*. The Dorkir was a snap.

We were heading to Nav 1B, where we would await the jump of another Dorkir, when Bossman spoke up.

"These Rapiers could make you lazy, Frankster. Don't let it give you a false sense of security. They're quick and nimble, but we're still carrying only three centimeters of armor on our sides. Just think what a Jalthi could do to that."

His speech, a long one for Bossman, was prophetic. Two Jalthi were waiting to meet the transport when we arrived at Nav 1B and they weren't happy to see us. To be perfectly honest, I was caught daydreaming when Bossman noticed the two targets. I threw the throttles forward and searched my display for the telltale red blips. That's when the first shot ripped into the right side and sent me spinning out of control.

I'd lost my hold on the joystick and it took a second to recover. My first move was to hit the afterburners. I didn't care which way I went, I just wanted to get away. Then I heard Bossman screaming. "Cut me loose, Lieutenant!" I'd forgotten to order him to attack and it almost cost us our lives.

"Help me out here!" I yelled. Bossman didn't waste a breath, and rolled right and turned left to protect me with his full guns and missiles. He launched a Dart and a Spiculum, just for effect, while I checked the left VDU for internal damage. It could have been worse. I saw a flash and knew the Dorkir had jumped, and I looped and rolled for position on the Jalthi that had sent me scampering through space. Bossman signaled a score just as I saw smoke begin to pour from my own target. Down he went.

We changed tactics on the Dorkir, using our Darts on the first two passes and switching to neutrons for the kill. What a day!

Mission Hints and Synopsis:

1. Five Dralthi protect a Dorkir at 15,000 kilometers from Nav 1A. With full guns, two or three shots down a Dralthi. Be aggressive and get this one over with fast.
2. Against Dorkir, just use standard rear attack maneuvers. You can get in a little closer than normal with a Rapier.
3. Four Krant and a Dorkir at Nav 2. Use lasers at long range and full guns or neutrons in close. If you have position when the shields weaken, Spiculum IRs are effective.
4. These two Jalthi are the toughest opponents on the mission. Don't let them attack you from the side. Always avoid trading punches with a Jalthi.

Kurasawa System
Mission 2
Omicron Wing

I remember how stunned we all were when Halcyon reported that Terran forces had captured a Kilrathi Ralari-class destroyer in Port Hedland. It was unbelievable.

Sector command wanted to bring the Ralari to the Kurasawa System and use it in the siege against the Kilrathi bases. Imagine that, using their own destroyer against them. The only problem was that the Kilrathi knew we had control of their ship and they would pull out all the stops to keep us from getting our hands on their technology.

Bossman and I drew the assignment to rendezvous with the Ralari when it jumped in, and escort the ship back to the *Tiger's Claw*. We'd been told that a wing of enemy fighters was approaching the jump point at top speed.

As Bossman and I raced to the launch pad, he told me his thoughts on the mission. "This is an opportunity we can't waste, Prankster. That Ralari could be the key to the whole mission. I'd advise avoiding any dogfights on the way if at all possible. If we have to fight, we'd better make it quick."

Wingman: Bossman
Ship: Rapier



I nodded my affirmation as I climbed into the Rapier's custom cockpit. The canopy was sliding before I had taken my seat and the launch caught me with only half the harness buckled. The launch team wasn't wasting any time.

We were cruising at full speed and really burning the afterburners when we hit the asteroids. I came to a screeching halt using backspace, then upped the throttles to 300 for our journey. It wasn't the safest speed, but I felt the extra maneuverability of the Rapier would keep us safe. It would have, but for the four Jalathi who saw us before we could sneak through the field. I told Bossman to break and attack and armed the lasers for some long-range shots. The cannons didn't do much to the Jalathi, but did split them up as they approached through the obstacle course.

I switched the guns to full and took a chance. I bumped the throttles to 350 KPS — dangerous in an asteroid field — and headed for the lead Jalthi. That's a real advantage against the Jalthi's maximum speed of 280, and made it the difference in the battle. I blasted the first with a neutron, the second with a Pilum Friend-or-Foe, the third with full guns, and Bossman nailed the fourth. I wondered whether we were fast enough.

We lit up the sky on our way to meet the Ralari. My finger cramped from leaning on the afterburner switch, but it was a lot quicker than autopilot. Fuel wasn't really a consideration either.

The Ralari had already jumped in and the four Gratha were swarming around it like bees around a hive. We couldn't go any faster, and we spit out our insults as soon as we had a target, trying to draw them away from the Ralari. Only two responded.

I ordered break and attack and tried to sidestep the Gratha who were heading our way. I knew we had to get to the ships attacking the Ralari. It was a mistake. I managed to slip by and get near the Ralari, but Bossman was sidetracked by the two attacking fighters. I'd have been better off if I'd just told him to keep formation until we'd evaded the first two fighters.

I hadn't even fired the first shot when the Ralari blew. Damn. Just one simple mistake had blown the greatest opportunity in the war's history. There's no telling what we might have learned from the data banks on that ship, much less the chance to slip in secretly with a converted Ralari destroyer on an unaware enemy.

Halcyon was livid when we returned to the *Tiger's Claw*. "I accept full responsibility, Colonel," I responded. "Bossman warned me about the need to make it past the first enemies we encountered quickly. I probably should have tried to work my way around the asteroid field and then just afterburnered away from those first Jalthi. At least the Ralari would have had a chance at that point."

I had failed to complete missions in the past, but this one really threw me for a loop. I kept running the sequence of events through my mind, searching for alternatives that would have made a difference. I found more than one. I'd missed an important communication with Bossman; we could have taken out two of the Jalthi and then made a break for the Ralari's jump point.

This one wasn't going to go away. I wouldn't be able to put it in the past. The only positive factor was that I would probably be a better pilot because of it. Some consolation.

Mission Hints and Synopsis:

1. If you engage the Jalthi in the asteroid field, you'd better take them out fast. A better alternative is to fly around the asteroid field and race to the Ralari's jump point ASAP.
2. If you fight the Jalthi, get in tight quickly and hit them with every weapon in your arsenal.
3. Taunts will draw some of the enemy Gratha away from the Ralari, but you can't depend just on words to complete this mission. You must get to them and take them down immediately. There's no time to waste.

Kurasawa System

Mission 3

Chi Wing

It was gut wrenching when Colonel Halcyon said the *Formidable* was in bad shape and needed assistance. I'd served aboard the destroyer during my final year at the academy. In an experimental program started just five years into the war, prospective pilots passed their final tests in a sort of trial-by-ordeal, on-the-job training aboard the Exeter.

I thought of the *Formidable's* Commander Della Guardia, one of the finest men I'd met since plebe year, and how he'd taken a personal interest in my naval career. The most amazing thing was that every pilot who trained with him felt the same way. He treated his subordinates with respect, even while demanding compliance. He never told you what to do without explaining why it needed to be done. We appreciated his philosophy and it was exactly what we were looking for during that difficult year. In many ways he was an enigma among Naval officers who had attained the same rank. He shattered the stereotypes.

Wingman: Bossman
Ship: Rapier

I snapped back when I heard the Colonel order Bossman and me to guard the *Formidable* against further attacks. He gave us the coordinates and dismissed the squadron. Bossman and I shot out of the room as if we had plasma-jet packs on our shoes.

"As soon as you launch, hit the burners and head for the *Formidable*!" I shouted. "We won't bother with a formation for this trip."

The colonel had mentioned a minefield, but we must have just skirted the edge. When I first saw the Exeter, five Dralhti were just coming in for their first pass. Bossman was waiting.

"Break and attack," I radioed and jammed the afterburners to full. I headed for the largest group, turned slightly to the left, and watched the right VDU. When the readout showed 1000 meters I yanked the joystick directly to the right and felt the rear begin to slide. It was a perfect move, and my nose came around to face the



lead Dralthi. I was ready with full guns and sent three quick volleys at him, then launched a Dart into the middle of the pack. The lead target exploded and I hit a trailing ship with the missile. I switched to neutrons to preserve blaster power and flipped the afterburners to full again.

Bossman had weakened the next target to find my sights and I smashed through the final defenses with the neutron. Next, I targeted each of the remaining three Dralthi and gave them my personal thoughts on their cultural heritage. I was firing hard and fast with the lasers before they had a chance to turn and attack the Rapiers. Before I knew it, all five Dralthi had fallen to my guns. The Rapiers were untouched.

"It looked like the Kahuna of space combat was flying with you on that mission," Bossman said incredulously. "The way you were pounding on those pilots, I could have just stayed back and watched. Come to think of it, that's about all I did."

The blood was really pumping as Bossman and I turned into position behind the Exeter and headed for the *Tiger's Claw*. "If Commander Della Guardia only knew," I thought. He would know soon enough.

We were prepared for the four Krant that jumped us on the way back to the carrier. I targeted each in turn and went through a series of taunts designed to make the cats look at the Rapiers as they would at flightless birds. The actual words can't be repeated here. I watched to see which would turn to face us, then targeted one of the others, locked in, and told Bossman to attack my target. I wanted to make sure he went after one of the ships that were trained on the Exeter. I turned away from the locked target and burned after the other attacking Krant.

To make a long story short, we eliminated the final threat to the Exeter by going after whatever ship was targeting the destroyer. Bossman relied on his neutrons and full guns, while I used a combination of Javelins, Spiculums, and guns to hit the enemy. With the *Formidable* in close proximity, I avoided using the Pilum Friend-or-Foe.

After the debriefing, I found out I was being reassigned to the Star Slayer Squadron flying Raptors. I wasn't looking forward to giving up the Rapier, but I didn't say anything to the colonel. When he told me that Commander Della Guardia wanted to see me, I shot out of the room like a laser beam. Even in war there are good times. I was sure this meeting would be one of them.

Mission Hints and Synopsis:

1. Use the afterburner slide and hit the five Dralthi quick and hard with your neutrons, darts, and full guns. As usual, the Kilrathi pilots are vulnerable to pointed taunts.
2. After falling into escort position behind the Exeter, set your guns on full and select a Spiculum or Javelin as your weapon. That way you'll be ready for the four Krant who attack next.
3. Avoid using a Pilum with two friendlies close by, and keep a finger on the afterburners.

Rostov System Mission 1 Gamma Wing

The Rostov System was an interesting place for our next battle with the Kilrathi. Because it was inhabited by the Mopoks, a sentient species, Confederation law forbade colonization of any of the planets. The system, though, is rich in mineral resources, and when a scientific expedition indicated a Kilrathi presence here, we knew we had to protect it.

Flying Raptors, Iceman and I would recon four jump points, paying special attention to the second and third, where the Kilrathi appeared to be running supplies. We knew we would run into dense asteroid fields along the way.

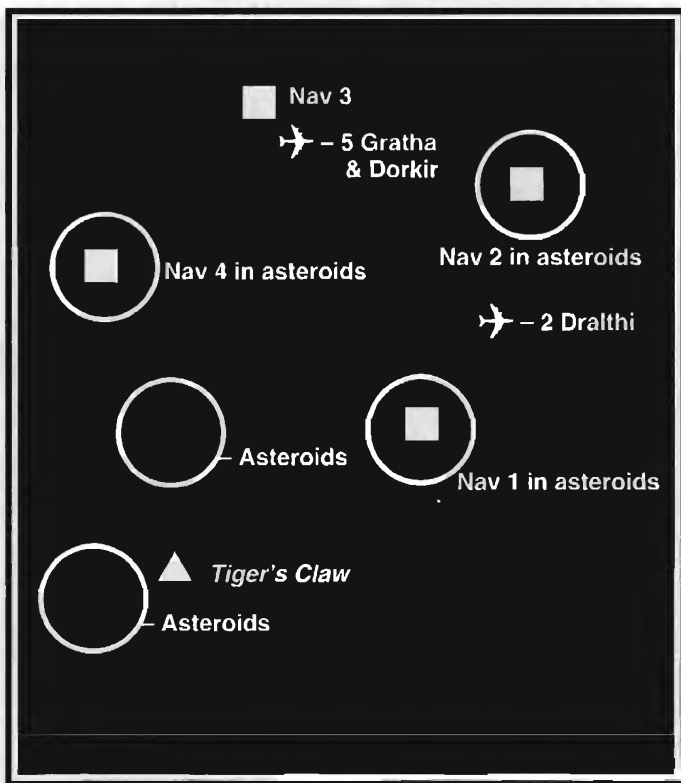
We launched into the middle of all the minerals we'd heard about. Unfortunately, they took the form of asteroids and posed a very real threat. We wove through them at 250 KPS, went to autopilot, then hit more asteroids at Nav 1. It was going to be a long mission. I was relieved to see the end of the fields and we headed to Nav 2.

Wingman: Iceman
Ship: Raptor

We were 45,380 kilometers from Nav 2 when Iceman noticed the bogies. Once we were close enough for autotargeting to

identify them as two Dralhti, I ordered Iceman to attack my target and threw the throttles forward. Since there were only two enemy ships and we were flying the well-protected Raptors, I just headed straight for them with my mass driver blazing. When I hit 2500 meters, I switched guns to neutron power and let my blaster regenerate. With our combined guns, the first Dralhti disintegrated before we took any damage. The second Dralhti started to run. We let him.

Our arrival at Nav 2 was uneventful, except for Iceman's uncharacteristic talkativeness. "I know we only faced two Dralhti in that last dogfight, Major LaFong, but I wouldn't advise using a frontal assault very often if you want to stay alive. Especially at the beginning of a mission. I'm only 31 years old, but I've learned that a cautious approach is the best way to



make sure I reach 32. I'll always follow your orders, Prankster, but I'd prefer it if you followed accepted strategy and tactics."

I knew what he meant. While hitting the Dralthi head-on was pretty safe, taking damage early in a mission can really cost you. It only takes a few direct hits to knock out a computer system. Thinking back, I'd been lax and we were fortunate to escape unscathed. We headed for Nav 3.

When the two Gratha attacked just before we reached Nav 3, I thought I would show Iceman that classic, cautious approach. I told him to attack my target, rolled right to present less of a target to the Gratha's guns, and then jerked the stick to the left. Then I punched the afterburners. We were heading right over the approaching wing. Keeping speed at max with the afterburners, I made a hard turn to the right and started to slide. Enemy ships have the most difficulty in hitting a sliding target.

"Nice move," I heard Iceman whisper. "I'm with you."

When the crosshairs moved just ahead of the lead Gratha, I thumbed the fire button and sent a stream of neutrons toward the first ship. Two connected and I saw the Gratha break formation. I ordered Iceman to break and attack, looked to see which target he went after, then made my decision. I was on the damaged Gratha's tail and, after a few gyrations, heard the locked-target ping and launched a Javelin. The shields weren't weak enough for the heat-seeker to finish the job, but two shots at full guns were plenty. That's when the Dorkir jumped in and a three-Gratha escort wing showed up.

We finished off the Gratha using the roll and turn and sliding maneuvers favored by Terran pilots for their combination of offensive and defensive effectiveness. They put you in position to attack, but keet you out of danger.

Removing a Dorkir is always the same. Hit from the rear, turn, hit afterburners, turn back. Nothing to it, unless you decide to approach from a different angle. Then the Dorkir's turreted lasers can be devastating.

We hit a few more asteroids at Nav 4, but no more enemies appeared. We headed for the *Tiger's Claw*.

After the Colonel's debriefing I headed for the bar to catch up on the latest news. It was news I didn't want to hear. Maniac had destroyed a sport with a Pilum FF during an escort mission. Everyone was bad-mouthing the young pilot. I went to find him.

Mission Hints and Synopsis:

1. The two Dralthi that attack after you leave Nav 1 aren't much of a problem. They're easy targets for neutrons or full guns and don't have thick armor. Just make sure you get by without taking damage.

2. Two Gratha attack at Nav 3. They're actually part of a larger force heading for a rendezvous. Use sliding maneuvers and the roll and turn, but keep your eye on the radar. Three more Gratha will appear and a Dorkir sport will jump into the Rostov system.

Between Missions

I kept running through the things I could possibly say to Marshall as I wound through the labyrinth of corridors to his room. Since our talk after the missions in the Cheng-Du System, I hadn't heard any more complaints about his performance. As far as I knew, he'd taken our conversation to heart and had really tried to work with his wingleader. I'm sure I'd have heard if he had disobeyed orders and taken off half-cocked on one of his personal battles against the Kilrathi.

I kept thinking of how I would feel in the same situation. I'd been in enough battles by then to understand how confusing space combat could become. The comm circuits were full of people screaming and yelling, enemy targets seemed to appear out of nowhere, and missiles and guns streaked through the battlefield. It could drive you crazy.

I could tell he'd had a few drinks from his private locker stock when he answered the door. It must have been something stronger than Goddard Special.

"Hey, Prankster, you're looking good," he slurred. He walked over to the table, had a seat, and poured himself another. I refused his offer of the same.

"I heard about what happened today, Maniac. It must have been rough. It could have happened to anyone you know." I walked over and sat on the cot facing him. He was shaking.

"But it didn't happen to just anyone, Prankster. It happened to me. Fourteen people went down with that sport, and I'm the one who hit the button and sent that damn missile out there." Maniac took a long swallow. When he looked up there were tears in his eyes.

"In every war there are casualties," I replied softly. "And in every war there are casualties caused by friendly fire. It's something we'll always try to prevent, but probably never eradicate. Look, Maniac, every pilot on the *Claw* has been in a situation where they had to launch a Friend-or-Foe missile and couldn't be sure it wouldn't lock on to a friendly ship. It's a decision combat pilots have to make."

Marshall didn't say anything for a few minutes. His glazed eyes roamed the cabin, glancing at the books on the shelf, his uniform hanging in the corner, and the photograph of our academy class taken just a few months ago. I felt uncomfortable.

"It's strange, Prankster. I really thought I was on top of things. I was flying on Paladin's wing, escorting a Drayman back

to the carrier. It was 'by-the-book' the whole way. Unnerstand what I'm sayin'? I was doin' it right, Prankster."

"When the four Gratha came at the Drayman, I wanted to head them off. But I waited for Paladin's orders. When he said break, I broke. When he said attack, I attacked. Before we had a chance to turn, I saw three more blips on the radar, and all of a sudden it was pandemonium. We were yelling at the pilots, they were yelling back and there were ships everywhere.

"I thought I had only used one of my two Darts on the first Gratha, and when I came up behind another one, I launched again. The timing was awful. The target was passing over the Drayman and turning behind it to hide. That's when I realized it was a Pilum and the closest target was the Drayman. I had fired two Darts at the first Gratha. I tried to destroy the missile with my mass drivers, but I was too late. The Drayman had taken a lot of damage and the missile strike was the last straw. It blew up.

"Paladin started screaming at me and didn't let up until we were back on the carrier. Halcyon suspended me from flying again until a board hearing could be convened, and none of the other pilots would look me in the eye. That's when I headed here. What am I gonna do, Prankster? I'm all torn up inside."

I stood and began to pace the room, gathering my thoughts. Marshall moved to the bunk, stretched out, and closed his eyes.

"We've had our problems, Prankster, but I always looked up to you. All I ever wanted was to be a space pilot. I wanted it so bad that I wouldn't let anyone inside to see my fears. It always looked easy to you. You knew what to say, when to say it, and who to say it to. I could never do that. My flying skills were all I had. I'm afraid, now, that they might be taken away."

I didn't know what to say or do and that's what I told Maniac. "Just hang in there, Marshall," I said as I left. "That's all you can do. Just hang in there."

I was worried. He was really taking it hard. and the Confederation couldn't afford the loss of any pilots, especially ones with Marshall's skills. To make matters worse, this came before he'd had a chance to prove to the other pilots that he had changed, or at least was making a real effort to cooperate. They were livid, and felt that his error reflected poorly on every one of the *Claw's* pilots. It was Marshall's misfortune to be the first pilot in the carrier's 10-year history who mistakenly destroyed a friendly. It would be a difficult, if not impossible, distinction to live down.

Rostov System
Mission 2
Xi Wing

While we'd been successful in halting the supply ships the Kilrathi had deployed throughout the system, their military presence was increasing daily. Tactical had reported several new bogies in the system, including a Ralari-class destroyer. Eliminating the Ralari was critical to our success.

Before we even hit the mission briefing, I met with Iceman. After yesterday, when I'd ordered a head-on attack against the Dralhti, I'd sensed he was holding something back. It was hard to tell with Iceman since he was so quiet all the time.

"I know I made a mistake out there yesterday, Iceman, and I appreciate your calling my attention to it before we met another enemy wing. I'm glad it was you on my wing. I know the wingman's role is to protect the wingleader and obey orders, but you're the real veteran in the wing and I'm always ready to listen," I said.

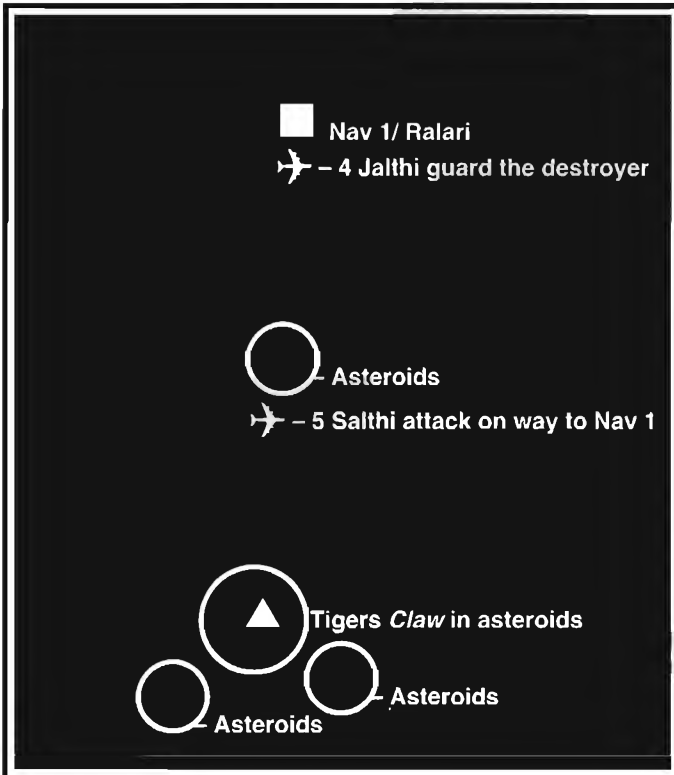
"No problem," was his characteristic reply. "Let's go."

Wingman: Iceman
Ship: Raptor

We decided to take advantage of the asteroid field and try to use it as cover to ambush the Ralari. We were well on our way when two wings of Salthi seemed to appear out of nowhere. The smaller wing of two Salthi was closer, so I ordered a break and attack, hit the afterburners, and raced into battle. I wanted to take the first two out fast and then turn our attention to the three Salthi that were furthest away.

The Salthi pilots were good, very good, but the light fighters just didn't carry enough firepower to pose much of a threat to our Raptors. They could be pesky, since their speed and acceleration were excellent compared with our heavy fighters, but it doesn't take many shots from the neutrons to destroy the 1.5-cm left and right armor. The only chance they had was to hang on until the odds were 5-2. They didn't make it that long.

Iceman scored with two perfect shots from the full guns. It took me a little longer to down my target, but I



might have been overly cautious after Iceman's warning the day before. I was giving the same respect to the Salthi that I usually reserved for the Kilrathi's heavy fighters. The comparison pales, since the Salthi only carries two laser cannons and a dumb-fire. The heavy fighters, especially the Jalathi, are heavily armed.

We turned on the last three ships and I ordered Iceman to attack my target. We could breeze right through these guys with our combined guns, and that's exactly what happened. We just evaded their first run, hit the afterburners to stay on their rear when they turned, and blasted away. Nothing to it.

I wish our next dogfight had been as easy. When we first saw the Ralari and the escort wing, we couldn't tell what type of fighters was providing protection. As soon as the first six-gun salvo headed our way, we knew they were Jalathi. They always present a formidable challenge.

Since there were four enemies, I ordered a break and attack and left Iceman to his own devices. I circled behind the Ralari, hoping to use it as a shield, but its turreted lasers locked on and sent my front shield reeling. I headed dead away from the enemy, with a Jalathi on my tail, to let the front shields regenerate and keep my intact rear shields toward the heavy fighter. Their strength dipped as well when a double shot of laser fire tore into me. It was time to go on the offensive.

I rolled left, turned hard to the right, and hit the afterburners to reverse direction and come back from above the Jalathi. He was ready, but by the time he had me in his sights, I had scored with three shots. When he turned to regroup, I was on his butt and firing full guns. That's all it took.

"Help me out here!" I heard Iceman yell. Three Jalathi were giving him fits. I burned straight toward him, turned right to begin a slide, then hit backspace to put on the brakes. Keeping my speed set to 0 KPS and just using afterburners, a tactic the Kilrathi hadn't seen before, gave me the edge and I blasted two Jalathi while Iceman took out a third. It was full guns all the way.

I used the same tactic on the Ralari that I use on all capital ships, but I fired all my missiles first, and turned off when I was about 2000 meters from the target. The Ralari sends a lot of laser fire to the rear and I wanted to stay out of range. Once my missiles were expended, I switched to neutrons and, with Iceman, continued the attack. It took awhile, but she lit up like a shower of fireworks on the Fourth of July.

Mission Hints and Synopsis:

1. Five Salthi attack about 45,000 kilometers from Nav 1. Use full guns, no missiles, break and attack, and hit fast. Then you can take your time on the last three ships. Watch out for asteroids late in the battle.
2. The four Jalathi who guard the Ralari are tough, but they're susceptible to sliding maneuvers, which counteract the effectiveness of their heavy guns.
3. Use the basic rear attack strategy on the Ralari, but turn off sooner and use all your missiles before switching to guns.

Rostov System
Mission 3
Tau Wing

I knew exactly what Iceman and I would do when the Colonel told us to investigate a large bogie at Nav 2. We didn't know what type of ship it might be, but it was big. Halcyon said we could approach from Nav 1, avoiding an asteroid field, or head straight to Nav 2 and pick our way through the rocks. Easy decision, since I'd spoken with Iceman before the mission.

"I always take advantage of cover when there's any around," he had said. "There are plenty of pilots who disagree because they don't want to take a chance on hitting a mine or a big chunk of stone, but I think the element of surprise outweighs the risk. The Kilrathi don't patrol the edges of asteroid fields as frequently as they do the open avenues of attack. Going through gives you an edge."

We headed for the asteroids between the *Claw* and Nav 2 on autopilot. I asked Iceman to maintain radio silence. When the four Dralhti appeared more than 48,000 kilometers from our destination, I wondered about our decision. Then I thought it might have been even worse if we'd tried to approach from the

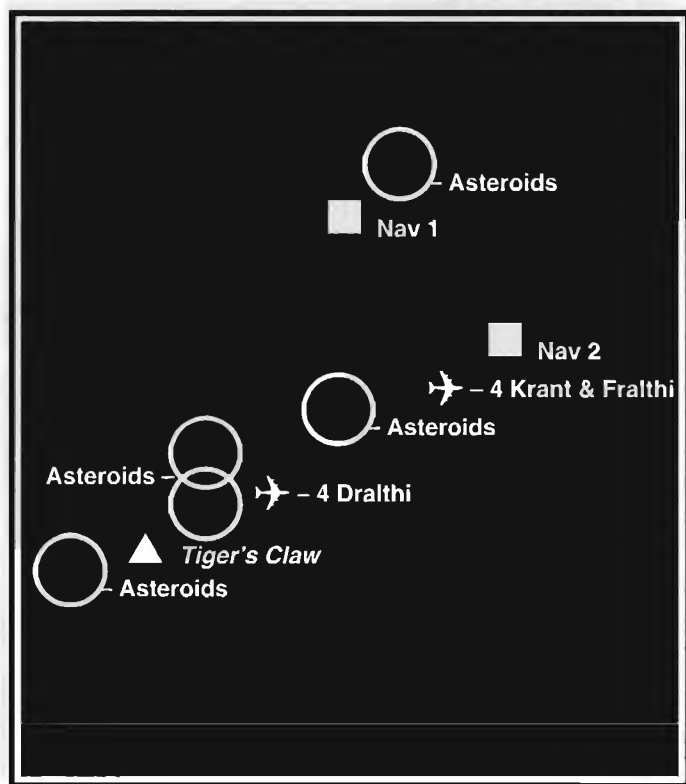
first nav point.

I saw the four Dralhti appear as one big red blip on the radar display, and told Iceman to form on my wing. He saw my afterburners fire and stayed with me as I headed right and tried to come in behind the Dralhti. It didn't work quite as planned, but a roll right, followed by a turn right and a quick burn, took us under their initial pass at us.

Once we'd blown by them, I punched backspace to hit the skids, turned back around to the right and kicked the throttles and afterburners to full. Now we were behind them and closing fast. I told Iceman to break and attack.

I let go with as many mass drivers as my power would stand, fired a Dart, and then held off until the blaster was on full again. Two of the Dralhti flipped and came back at us,

Wingman: Iceman
Ship: Raptor



but they were damaged by our first assault and went down when we switched to neutrons and hit them right in the nose. I was waiting for some fur to fly. Iceman and I took out two more just using mass drivers at longer ranges and neutrons when we could get close. The trick was to keep from wasting too much blaster power with the Gatling.

We slipped into the asteroids, reduced speed to 250 KPS, and concentrated on our task. I never even worried about losing my focus in the rocks, because I was intrigued by what might be waiting on the other side. Iceman and I never spoke.

We emerged from the field and went to autopilot, hoping we still had an advantage with the unknown bogie. I think we would have surprised the large ship, but a wing of Krant picked us up along the way. We attempted to run, but when I saw the gray blip appear on radar, I knew they would stay with us to protect the larger ship. We turned and attacked.

Krant are difficult enemies. They're well shielded and armored, relatively quick, have good acceleration, and carry three heat-seeking missiles. Our Raptors are just a bit faster, but carry a much more sophisticated arsenal. That was their downfall.

After avoiding the first wave, I lined up on a Krant and hit him hard enough with the neutrons to put a hurting on his shields. This time, though, I turned away from the Krant, let him follow me, and targeted a new enemy. As soon as I found one, I dropped a Porcupine that destroyed the already damaged Krant behind me. Iceman called out that he'd dropped one too, and that's when I knew we were on top of things. The remaining two Krant I stopped with afterburner slides, neutron guns and Iceman's help attacking my target. We headed for the gray blip.

This was the second Fralathi I'd seen, but the first configured as a cruiser, instead of as a light carrier. It meant she carried more lasers, but we wouldn't have to worry about fighters. I'll take on turreted lasers over a fighter's weapons anytime.

Halcyon had asked only for a report, but the temptation was too great. We were undamaged and carried most of our missiles. It was David-and-Goliath time. Iceman attacked from the sides while I took the rear. We must have made 10 passes each at the Fralathi before the right VDU showed some damage. I checked the radar, went to full guns, and decided I'd really get close before I cut loose. The Fralathi exploded just as I braced for a collision. They weren't going to believe this back at the *Tiger's Claw*.

Mission Hints and Synopsis:

1. Take advantage of the asteroids and approach the large bogie by heading directly toward Nav 2.
2. Use mass drivers at long range and the neutrons or full guns when you're close to the four Dralathi who attack 48,000 kilometers from Nav 2. Break and attack is best against four Kilrathi light fighters.
3. Afterburner slides and full guns against the Krant.
4. Just keep going after the Fralathi with missiles and guns and eventually she'll explode, but break away sooner than normal when approaching from the side or rear.

Hubble's Star
Mission 1
Kappa Wing

When Roberts developed the *Wing Commander* holo-vid, he had to come up with a way for people to win or lose. At my insistence, he used the missions in Hubble's Star and Hell's Kitchen as the "losing" route. In the real war, the missions weren't flown by pilots on the *Tiger's Claw*. The following mission reports are from the actual war.

Pilots: Major Pitak Puzaki
1st Lieutenant Marsha Shannon

Ship Type: Scimitars; assigned to TCS *Eagle's Talon*

Mission: Protect the colonists in the Hubble's Star system. Twelve wings were dispatched. Kappa Wing was assigned a sweep of three nav points.

Synopsis: Single Ralari and fighter escort are encountered 8,000 kilometers from Nav 1. Shannon's engines overheat and she returns to the *Eagle's Talon* for repairs. Following Tactical Command Recommendation 2716-B, the mission continues as a solo effort.



An afterburner slide to the right, preceded by a 90-degree roll, evades first attack by escort wing. Two Krant weakened by mass driver guns and destroyed with Javelins. Two Krant downed with Gatling only. Rear attack on Ralari using Darts and guns is successful.

Approximately 7500 kilometers from Nav 2, five Dralthi, escorting two Dorkirs, attack. Evade using afterburners and multiple turns to slide from side to side. Use Dralthi's up or down loop against them and destroy all with mass drivers. Rear attacks on Dorkir are successful. Mines encountered 3510 kilometers from Nav 3.

Pilots: Major Pitak Puzaki
1st Lieutenant Marsha Shannon

Ship Type: Scimitars; assigned to TCS *Eagle's Talon*

**Hubble's Star
Mission 2
Kappa Wing**

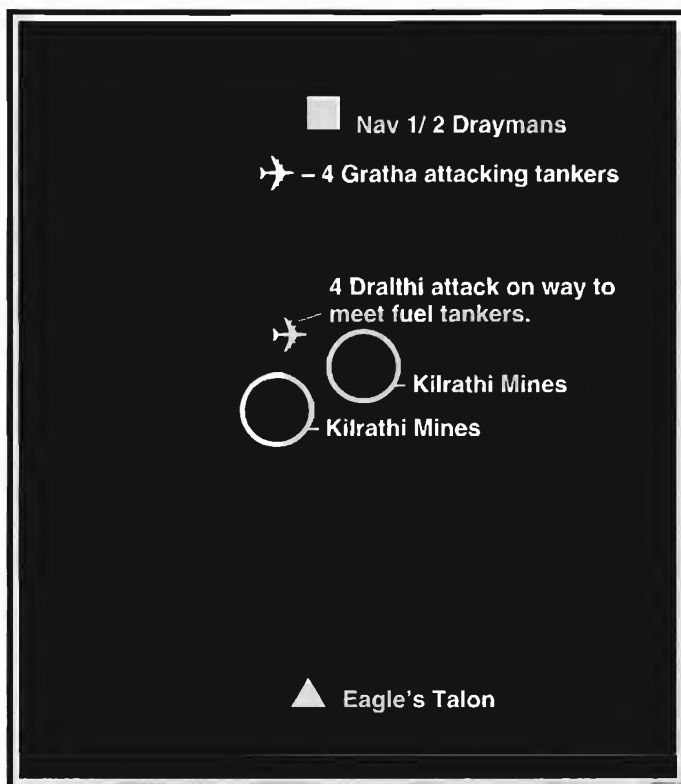
Mission: The *Eagle's Talon* was low on fuel. We were assigned to escort fuel tankers back to the carrier from their common jump point at Nav 1. Heavy resistance was expected.

Synopsis: At a distance of 40,000 kilometers from Nav 1, four Dralhti were observed moving on an intercept course with our patrol. Increased speed to maximum velocity and broke formation to attack. Just before igniting the afterburners, a small mine field was encountered. Speed decreased to 250 KPS.

After leaving the mines, afterburners fired to full, and course altered to circle and approach enemy formation from the rear. Dralhti discover our position before maneuver has been completed, and turn to engage. Break and attack ordered. Turns to left and right divide the enemy's attention and individual attacks are begun. We commence firing with the mass driver cannons, using afterburners to follow when the Dralhti turn away. All four Dralhti are defeated with minimal damage to the Scimitars. Rendezvous with tankers completed.

Four Gratha attack the tankers on return route to the *Tiger's Claw*. Taunts used to divert attack to Scimitars. Targets selected according to attack patterns. Gratha actively after the tankers are targeted first. Mass drivers employed to weaken shields and armor, then Javelins and Darts from the rear to destroy targets.

Resolution: Two Drayman tankers safely returned to the *Tiger's Claw*.



Hubble's Star
Mission 3
Phi Wing

Pilots: Major Pitak Puzaki
1st Lieutenant Marsha Shannon

Ship Type: Scimitars; assigned to TCS *Eagle's Talon*

Mission: Code Red missions as the main Kilrathi forces in the system are attacking Hubble IV. Phi Wing is ordered to investigate a report that a new group of bogies has disappeared in an asteroid field at Nav 1.

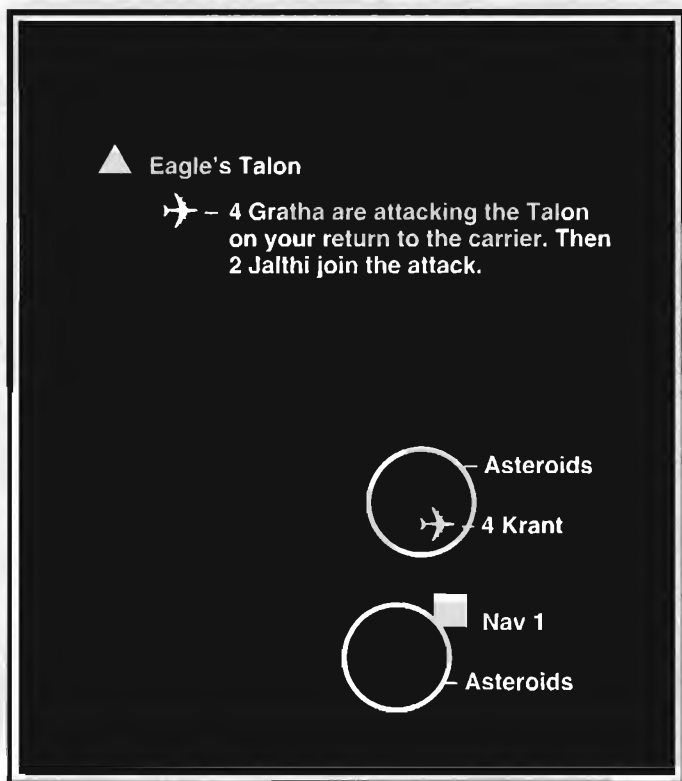
Synopsis: We discovered four Krant in the asteroid field at Nav 1. They appeared to be heading toward the *Eagle's Talon* and an immediate attack was ordered with both Scimitar pilots attacking the lead Kilrathi ship.

Traveling at 300 KPS, mass driver cannons were used to clear our path through the asteroids. Shannon broke left and nosed down until below and behind me. I launched a single dumb-fire missile

while the enemy targets were still in formation. Evasive measure taken until blaster power reached maximum levels. Constant jockeying for advantageous position, with cannons used only when close and sure. A single Javelin attack was successful, but three Krant destroyed by guns.

Four Gratha observed attacking the carrier. Break and attack ordered at full afterburners. Constant sliding tactics, mass drivers in tight, and remaining Javelins eliminate two targets. Taunting is constant.

Two Jalthi join the attack. Target locked on trailing Jalthi and Shannon is ordered to attack it. I engage lead Jalthi. Dramatic speed changes and frequent slides employed. Shannon destroys one Jalthi, I take out two Gratha and a Jalthi with Gatling.



Pilots: Major Pitak Puzaki
1st Lieutenant Marsha Shannon

Ship Type: Scimitars; assigned to TCS *Eagle's Talon*

Mission: Refugee ships are flooding the system. A Kilrathi carrier is moving this way. Civilians are fleeing the devastation inflicted by a massive Kilrathi raid on the three planets. Water and fuel supplies are low in many areas. Beta Wing is ordered to escort a Drayman, loaded with civilians, to the safety of the *Eagle's Talon*.

Synopsis: Four Salthi jumped when 42,000 kilometers from the Drayman's jump point. Break and attack ordered and all Salthi destroyed using guns. Basic strategy was to maneuver into a rear or side attack, where their defenses are weakest. In following position, we saved guns until they looped up or down.

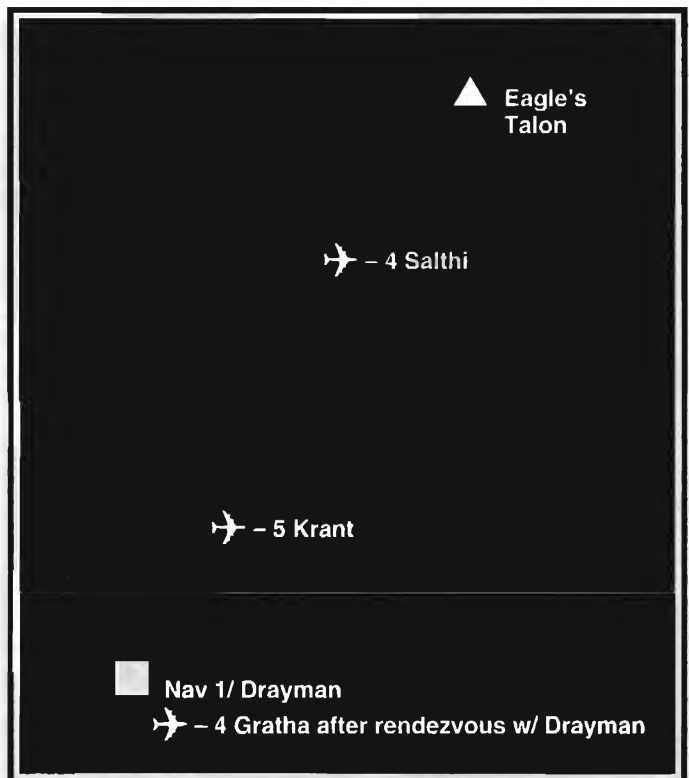
Three Krant destroyed 10,000 kilometers from the jump point. Slides, roll and turn are effective as we use Darts against the weak sides, followed by mass drivers. Two more Krant attack and we use almost constant bursts of the afterburners to evade their attacks and maneuver into a favorable attack position. One is downed with a Javelin HS, one with guns.

At rendezvous with Drayman, we position ourselves to the rear and set speed to 120 KPS. Four Gratha initially attack the Drayman, but all respond to taunts. Targets attempt to lead us away from the transport, but we constantly shift attack to the closest enemy fighters. Two destroyed with Javelins from the rear, two hit and killed with mass drivers. One enemy pilot ejects and we radio his location to space rescue units.

Hell's Kitchen

Mission 1

Beta Wing



Hell's Kitchen
Mission 2
Theta Wing

Pilots: Major Pitak Puzaki
1st Lieutenant Marsha Shannon

Ship Type: Scimitars; assigned to TCS *Eagle's Talon*

Mission: Combined Kilrathi forces have been chased into the system following their defeat in the Venice system. Theta Wing's mission is to recon every bogie in the system, making sure to find out why six enemies have been spotted in a circling pattern at Nav 1. If something big jumps in, engage and destroy.

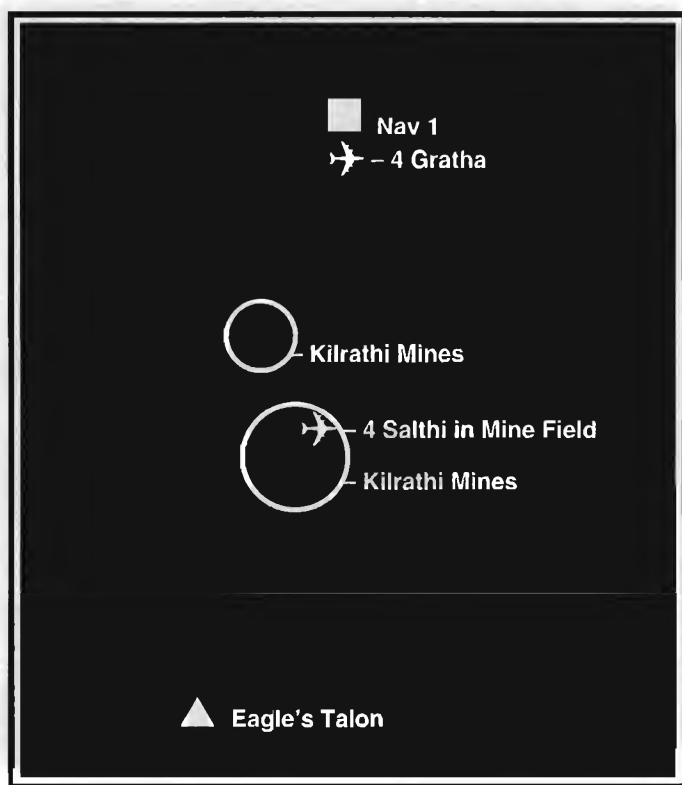
Synopsis: Minefield encountered on the way to investigate the circling enemy ships. We reduce speed and are surprised when four Salthi attack us in the minefield and score with lasers to our front and sides. Break and attack ordered. Shannon breaks left and is followed by three ships. I target the fourth.

Although it was dangerous, I fired a quick burst on the afterburners

to avoid an incoming missile and slid slightly to the right to bring my nose around to aim at the Salthi. The mass drivers scored, and I took out the enemy with a Javelin when the ship turned to run. Shannon called for help. I responded immediately.

One Salthi goes down to Shannon's lasers, but her ship is destroyed by missiles from the other two ships. I dispatch them with the mass drivers from the rear. I don't hear the EBS signal that would indicate she ejected, but radio the *Eagles Talon* to initiate a search.

I only found four Gratha at the nav point. The dogfight was a blur of slides, rolls, loops, and turns. Missiles, lasers, and mass drivers lit the sky. I expended all my missiles before destroying the enemy ships.



Pilots: Major Pitak Puzaki
Captain Reynolds Carpenter

Hell's Kitchen
Mission 3
Mu Wing

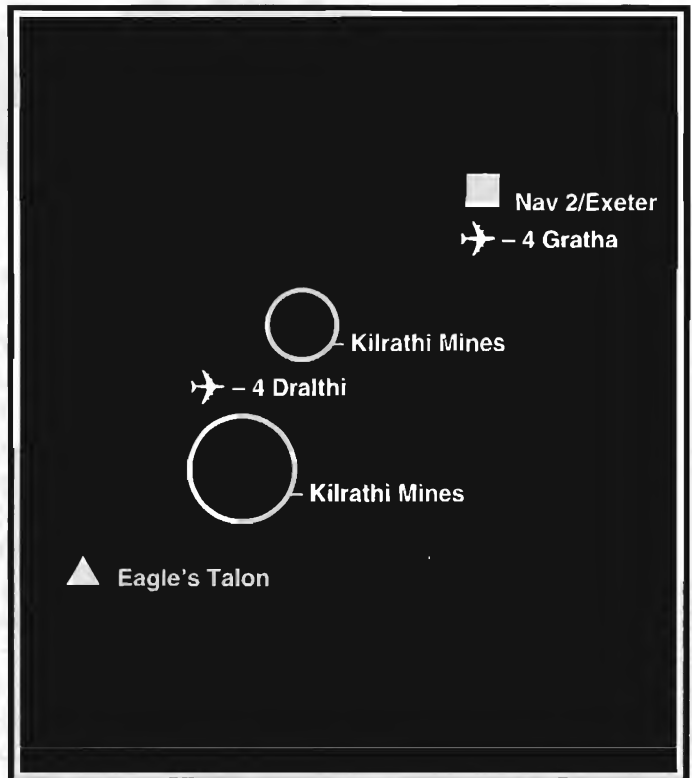
Ship Type: Scimitars; assigned to TCS *Eagle's Talon*

Mission: An Exeter was under heavy attack and Mu Wing was selected to provide assistance. We'd been ordered to make all possible speed and avoid any other enemies encountered en route to the destroyer.

Synopsis: Four Dralthi showed up on our way to meet the Exeter. I ordered Carpenter to form on my wing, turned right, and kept the afterburners running at full power. When the blips disappeared from the radar screen, we altered course to bring the nav cursor back into view. Continued on full afterburners until we reached our destination.

Four Gratha were bearing down on the Exeter. Break and attack ordered, and we hit full afterburners and raced toward the destroyer. I targeted each attacking ship in turn and tried every insult in my communications repertoire. Three ships turned from the Exeter to confront our wing.

Carpenter launched both of his Darts as the three Gratha headed toward us. I fired a quick volley from the Gatling, then broke right and hit the afterburners to go after the Gratha that was still hitting the Exeter. Concentrating on the one ship, two other Gratha hit me hard from the rear and sent my shield protection tumbling. I ignored the threat and destroyed my first target with my mass drivers and a Javelin HS. Eject warning sounded when a missile caught me from the rear and I punched out. Back at the *Talon*, I discovered that Carpenter had completed the mission on his own.



Hell's Kitchen
Mission 4
Phi Wing

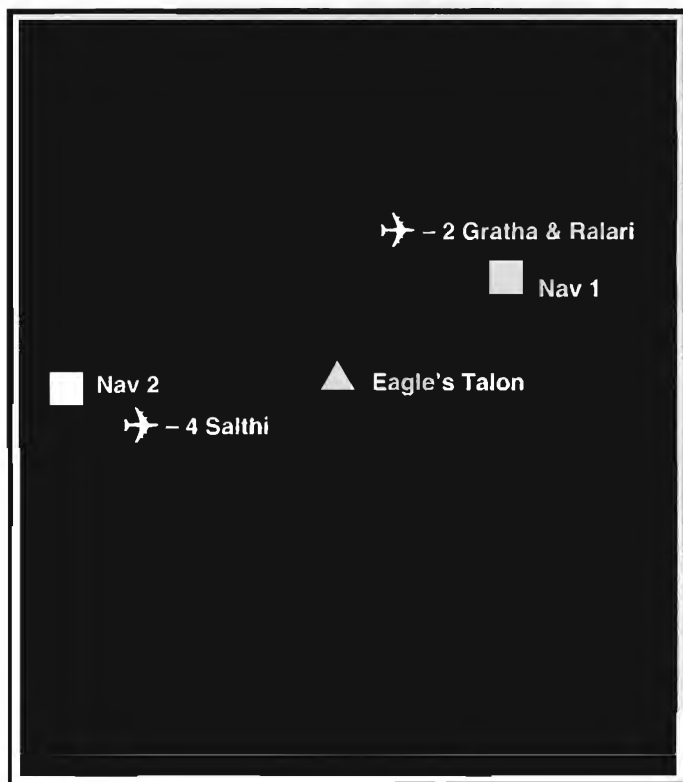
Pilots: Major Pitak Puzaki
Captain Reynolds Carpenter

Ship Type: Scimitars; assigned to TCS *Eagle's Talon*

Mission: The *Eagle's Talon* was ordered to Nav 2 to jump to the Venice system and assist the *Tiger's Claw* in the final assault on the Kilrathi. In a last-gasp effort, all remaining enemy forces in Hell's Kitchen were attacking the carrier to prevent the jump.

Synopsis: When we reached Nav 1, two Gratha and a Ralari were heading for the *Talon*. We went after the Gratha first, saving our missiles for the Kilrathi capital ship.

While Carpenter rolled and turned to move above the Gratha, I turned right, hit the afterburners, and yanked the stick left for a sliding attack. I kept my finger on the afterburner switch, knowing it was the most valuable defensive weapon in my arsenal.



With constant speed changes, I avoided the incoming gunfire and slid into the slot behind the Gratha. He dropped a Porcupine that caught the Scimitar's upper superstructure, and I blasted away from the rear with the mass drivers. It took more than eight attacks to destroy the heavy fighters.

The Ralari fell to four Darts, two Javelins, and constant gunfire from our two Scimitars. Taking our time, we hit the destroyer from the rear, turned away at 1200 meters, and circled to attack continuously.

We ran into four Salthi, the last in the system, 121,000 kilometers from Nav 2. Under break and attack, we destroyed the Salthi light fighters, using guns to weaken the shields and heat-seekers for the kill.

The Final Assault: Preparation for Victory

It was a healthy tension that permeated the *Tiger's Claw*. We all knew the Venice System was vital to the Kilrathi's effort and that a victory here would signal a turning point in the war. Terran Intelligence had reported that the Kilrathi High Command operated from a starbase located in the system. If we could destroy that base, we would remove the brains of our cat-like enemies.

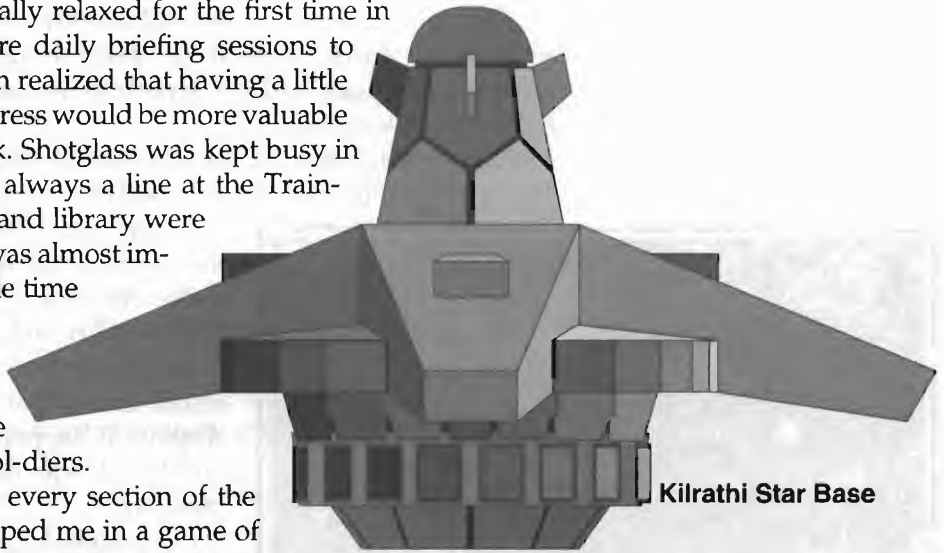
All available Rapiers had been ferried to the *Tiger's Claw* for the final battle. Technicians swarmed over the craft, making last-minute calibrations to the targeting system, loading weapons, and performing routine maintenance before the big push. Training flights were constant for the pilots who had yet to fly in the TCSN's most advanced medium fighter.

The pilots actually relaxed for the first time in months. There were daily briefing sessions to attend, but Halcyon realized that having a little fun and relieving stress would be more valuable than constant work. Shotglass was kept busy in the bar, there was always a line at the Train-Sim, and the gym and library were in constant use. It was almost impossible to schedule time on one of the grav-ball courts, and the swimming pool's lanes were filled with wet soldiers.

I spent time in every section of the carrier. Spirit whipped me in a game of one-on-one grav-ball, but I beat Iceman in a one-armed 100-meter race in the pool. I wrote letters, caught up on the news, read books, and meditated.

When Halcyon requested every-one's presence at mission briefings the following day, the atmosphere changed. Alcoholic beverages were restricted at the bar, the boisterous card games stopped, and the carrier became one of the quietest places in the universe. You would find a few small groups whispering in the lounges, but most of the pilots preferred solace as they prepared for their next missions.

I spent the last night watching old comedy movies ... W.C. Fields, the Marx Brothers, Eddie Murphy, Richard Pryor, Robin Williams, Billy Crystal. Only laughter kept the fear away.



Kilrathi Star Base

Venice System Mission 1 Epsilon Wing

The first Terran missions in the Venice system were reconnaissance patrols used to identify Kilrathi ships and their locations. We were hoping to find their starbase, the operations center for the High Command, but realized the chances were against us in the early stages.

Halcyon sent Epsilon Wing, Hunter and me, on a four-point patrol where we would make sure an Exeter was safe before moving into unknown territory. The only thing we knew positively was that scads of debris had been identified in the system. Tactical believed it to be mines, and if it was, the Colonel wanted a full report. Just before departure, Halcyon told us to engage anything up to a Ralari destroyer.

We cruised by Nav 1 and did a fly-by on the Exeter without spotting any enemy ships. It was a wondrous sight, but I wished it were taking place under different circumstances. I mentioned it to Hunter as we passed.

Wingman: Hunter
Ship: Rapier

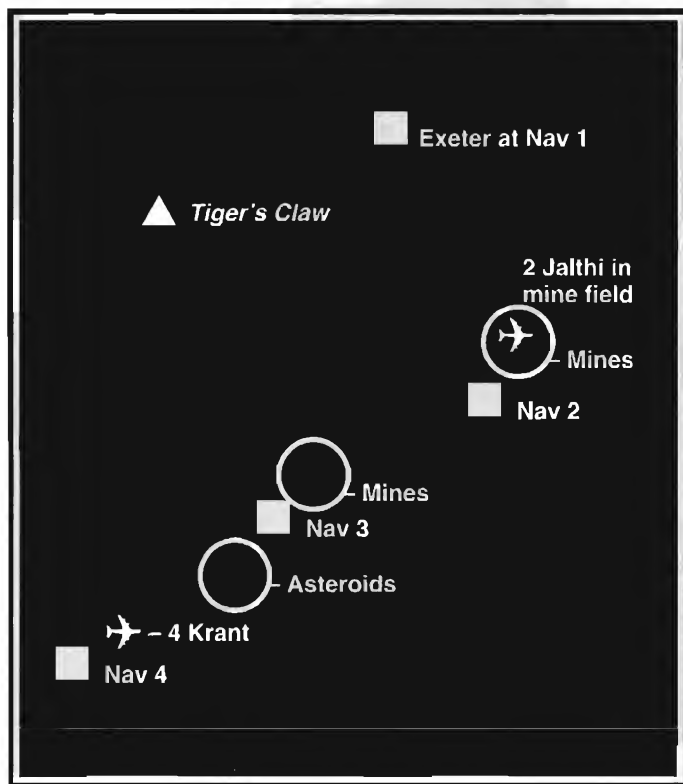
We were turning for Nav 2 when he replied. "Stay focused, Frankster. We'll be chasing the tails of more Kilrathi than you've ever seen soon enough. This is their last chance, and with High Command in the area it'll be swarming with rabid cats. Stay on your toes now."

I'm not sure whether I saw the mines first or the lights on the radar display. It happened so fast. All of a sudden, I was dodging lasers and claymags.

I targeted the lead Jalthi and locked him in from the keyboard. I told Hunter to attack my current target, then broke down and right and changed my KPS setting to 250. I wanted to make sure Hunter kept a Jalthi busy so I could hit the other.

Concentrate on one target at a time, Bossman had once told me. It was great advice.

I knew I was going to take a shot on the Jalthi's first move, but I waited until he was pretty close and let a Pilum FF fly. Then I darted away with



a short afterburner boost and set my guns to full. Somehow I missed hitting a mine during the maneuver.

Rolling right to reduce my profile, I missed with my first burst but scored with the second and third. It didn't seem to faze him. I couldn't slide in a minefield, so I launched another Pilum and tried to keep the Jalthi in my sights. The Pilum hit him pretty hard, but it still took two more direct hits with the full guns to bring him down.

I checked internal damage. It was worse than I'd thought. My weapon was destroyed, although I still had my guns, and the ejector system was slightly damaged. There was no way to tell whether it worked unless I needed it.

Hunter had taken a few hits, but he had scorched the Jalthi a few times as well. I needed to keep the blaster power up, so I switched to neutrons and raced over to help him out. I added my guns and Hunter sent a Spiculum straight into the left engine. I think the pilot ejected, but I knew we'd never find him in all these mines. We reached Nav 2 without leaving the minefields.

"I couldn't believe the size of the minefield," I yelled to Hunter. "There must be a million of those things out there."

"I told you to stay on your toes," he replied.

We hit more mines on the way to Nav 3 and an asteroid field on the way to Nav 4. One mistake I made in the last one almost sucked the air out of the Rapier. The ejector system was completely destroyed, and the computer and communications systems were damaged.

Limping might be a better term for the wing as we continued toward the last navigation point. When the four Krant jumped us, I knew it was big trouble. We tried to hang on, but we just couldn't keep up with the undamaged enemy fighters. Knowing my eject system was out, I screamed to Hunter to form on my wing. Then I accessed the nav map and selected the *Tiger's Claw*.

I was afraid the afterburners would melt the tubes. It might have been the longest continuous burn ever attempted in a Rapier, but the ships somehow held together. Hunter and I made it to the carrier and passed our data discs along to tactical ops before we raced to meet Halcyon.

Halcyon was glad to see that we'd made it back in one piece with our flight recorders. The mapping of Kilrathi minefields could begin. He wasn't pleased, however, that we had missed the last nav point on the patrol.

Mission Hints and Synopsis:

1. 10,000 kilometers from Nav 2, Kilrathi mines and two Jalthi are encountered. Use Pilums, Spiculum IRs, and Darts at a distance and full guns at close range. Fly defensively.
2. You'll run into more mines at Nav 3, and then asteroids on the route to Nav 4.
3. Four Krant attack the wing when 12,000 kilometers from Nav 4. Afterburner slides and full guns in close. You have a real advantage in firepower.

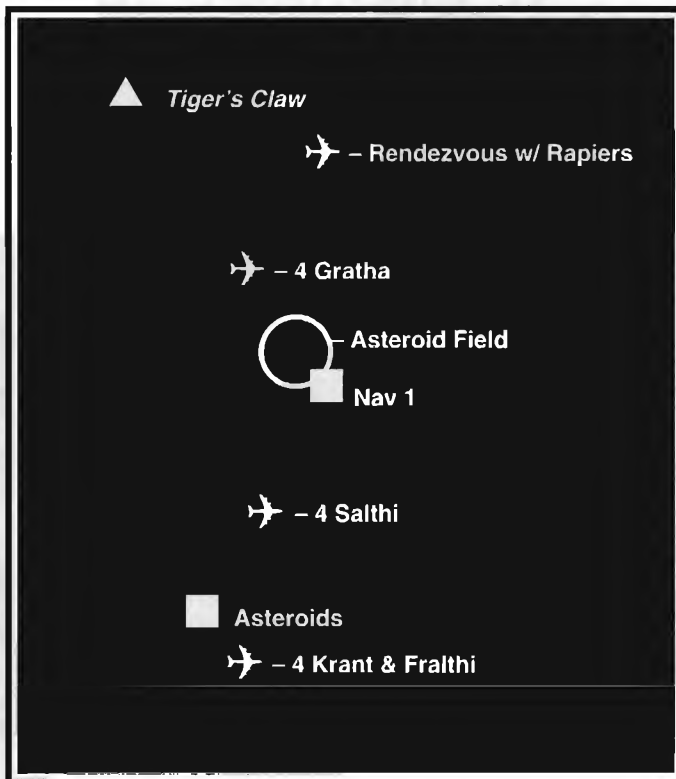
Venice System Mission 2 Nu Wing

The *Tiger's Claw* fighter patrols had identified multiple Kilrathi targets in the Venice System. With the assistance of fighters from the carrier *Kyoto*, we were ordered to engage and destroy specific ships and escorts throughout the system. Nu Wing would rendezvous with Rapiers from the *Kyoto* and head out in search of a Fralthi. According to Intel reports, Gratha, Salthi, and Krant would protect the 500-meter cruiser.

Immediately following our launch, I called to Hunter. "The Fralthi is the biggest enemy ship we'll ever face," I said, "so try to save the majority of your missiles for her. We're going to hit some tough resistance, but full guns and neutrons should do the job."

We rendezvoused with the other Rapiers and set our course for Nav 1. Hunter saw the lights on the radar first and called out. We were 12,000 kilometers from our first nav point, and two Gratha were racing straight toward us. I initiated a break and attack, armed my full guns, and headed left. Hunter pulled up and tried to gain position above the enemy ships. We both hit the afterburners and took them to full power. I tried a slide, but was

Wingman: Hunter
Ship: Rapier



late and couldn't get my nose around to target either of the ships.

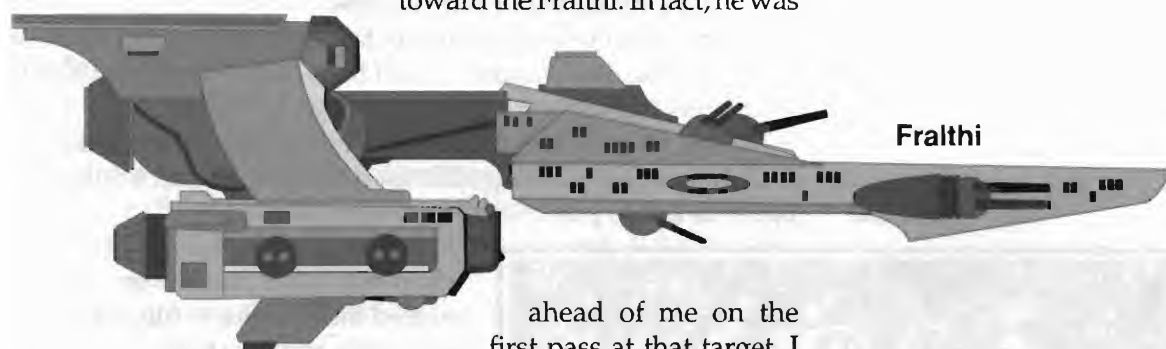
I turned back to the right and fired the burners to come in behind the trailing Gratha. I stayed on his tail and watched the shower of sparks when my full guns blasted him into oblivion. I glanced at the radar to find my next target and noticed that two more ships had joined the attack. Just then, I heard one of the Rapier pilots call out that she had downed her target. The protection was great flying in a four-ship wing.

The odds were in our favor now, four Rapiers against two Gratha, and we put our 130-KPS speed advantage to good use. Using only guns, the enemy ships went down fast. So did the four Salthi that appeared at the first nav point. It doesn't take many shots from a neutron against their weak side armor.

We lost a Rapier to the four-Krant escort for the Fralthi at Nav 2. I don't know why the pilot just headed straight in, but he never had a chance against the eight combined laser cannons at long range. Maybe his flight recorder will give us some insight later.

Even though we were now only three ships strong, we could rock the Krant at close range. They're carrying lasers, heat-seekers and a Friend-or-Foe missile and can deliver quite a blow at longer ranges, but our neutrons really deliver in tight quarters. That's exactly where we fought them, keeping a finger on the afterburners to shadow and cutting loose with the heavy guns.

I didn't have to tell Hunter to attack my target when I turned toward the Fralthi. In fact, he was



ahead of me on the first pass at that target. I

couldn't keep track of exactly what the other two Rapiers were doing, but I came in from the rear and fired a Dart and Spiculum on my first pass, a Pilum and Dart on the second, and then switched to the guns. After each attack, I turned away and let my blaster power regenerate, then turned back and held my fire until I reached a distance of 2000 meters. The explosion was incredible.

When we found out why the Rapier pilot from the *Kyoto* had rushed in on the Krant, we realized we had witnessed one of the most heroic acts in the war. Flight recorder data revealed that a computer system malfunction, not unusual in such a new ship, had taken away his ability to turn, eject or communicate. Knowing that he couldn't fight, he'd sacrificed his life and his ship and just tried to inflict as much damage as possible in a suicide rush at the enemy. We held our own memorial service on the *Tiger's Claw* for the young pilot.

Mission Hints and Synopsis:

1. Four Gratha attack 12,000 kilometers from Nav 1. With four Rapiers in the wing, you can concentrate on one enemy target at a time. Try to attain a rear attack position and use full guns and neutrons.
2. Four Salthi hit at Nav 1. They're quick, but if you can use your neutrons against their side shields, they'll fall quickly.
3. Use your firepower advantage against the Krant and try to crowd them. Stay on your afterburners.
4. Hit the Fralthi with your missiles and then switch to the guns in a rear attack.

Venice System

Mission 3

Phi Wing

Terran Command had discovered the location of the Kilrathi starbase and the *Tiger's Claw* was moving into position to launch her fighter wings against the final target. Significant resistance was expected, and Phi Wing was ordered to take out any enemies encountered on a three-point scouting patrol ahead of the carrier. Then we were to return and guard the starboard side against the fighter attacks that were sure to come.

When we hit the asteroid field while still 73,000 kilometers from Nav 1, I radioed the location back to the *Tiger's Claw* so she could alter course and avoid the hazard. We worked our way through the rocks and reached our first point without encountering any enemy fighter or capital ships.

"Maybe we've inflicted more damage in the system than we thought," I said to Hunter. "I can't believe we've traveled 90,000 kilometers without any enemy sightings. It's strange."

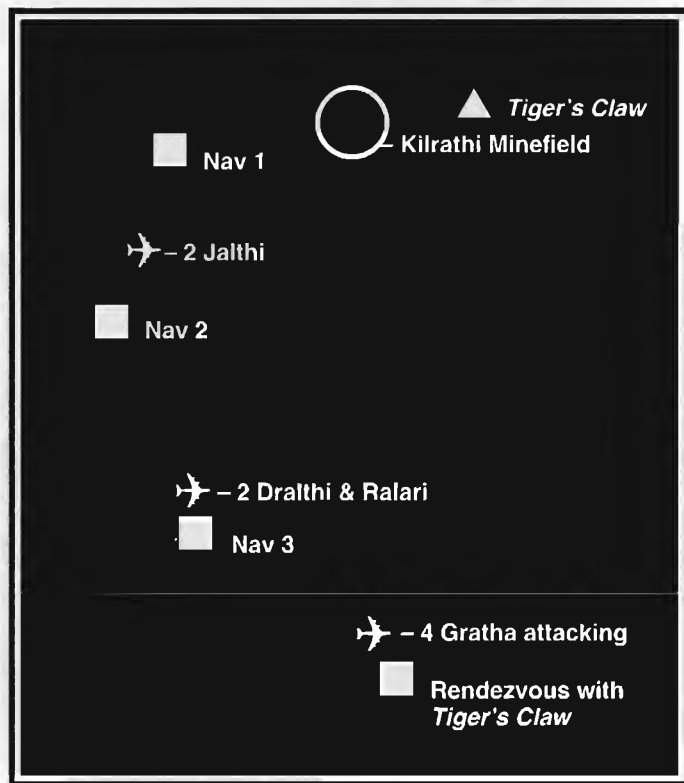
"You never know, Prankster," he replied. "Maybe they're avoiding us and sneaking back to attack the *Claw*. Let's finish our patrol as fast as possible and get back there."

We had almost reached Nav 2 when two Jalthi opened up on us. I pushed the throttles to full, added afterburners, and kept turning right and left to keep clear of the incoming laser cannons and neutrons. I ordered a break and attack.

My first thought when dogfighting with a Jalthi is always defensive. You need to avoid the tremendous firepower from their six gun ports. Luckily, you have the speed advantage to make it work.

I kept circling the Jalthi and using my afterburners to try and come up from the rear. Once I had position, I fired with the full guns, then broke away when the Jalthi turned around to face me. I launched a Spiculum that scored on the first one, but it wasn't powerful enough to take him down. Another Spiculum and full guns shattered the heavy fighter.

Wingman: Hunter
Ship: Rapier



I joined Hunter and we managed to destroy the second Jalthi as well. The only problem was that the dogfight took a long time. We needed to get back to the carrier.

Just before we reached Nav 3, the Ralari and a small fighter escort showed up. They were heading toward the *Tiger's Claw*, until we launched an aggressive attack. I couldn't understand why only two Dralthi were guarding the destroyer, but I was glad. Another break and attack was ordered and our full guns ripped through the Dralthi's armor when they tried their patented looping escape either up or down. Now that we know how they'll react, the Dralthi are one of the easiest targets to destroy.

I didn't keep enough distance from the Ralari as I swept across her bow and turned to circle and approach from the rear. Her turreted lasers caught me and I lost my target track, which made all but my Dart missiles ineffective. Dumb move.

The Ralari's shields and armor yielded to the full guns and Darts from the two Rapiers, but once again, it took longer than expected to finish the job. We turned toward the carrier and kept our fingers on the afterburners instead of using autopilot. We could get home faster that way.

By the time we sighted the *Tiger's Claw*, Halcyon was screaming for assistance from all Confederation ships. Four Gratha were hammering the unprotected ship. Whatever wing had been assigned the port position hadn't returned from patrol yet.

We started taunting the enemy as soon as the Gratha showed up on our autotargeting VDU. I called out to each of the ships, telling them to "bite it," and Hunter was hollering as well. These must have been veteran pilots, since only one turned away. We went after the others in a break and attack.

Hunter just blew away the first Gratha with a precision slide that put him in perfect position to use his full guns. There couldn't have been more than 100 meters separating him and the enemy ship, and his neutrons and lasers ripped through the hull of the ship. I went around the carrier and came down from above a Gratha that was concentrating on the *Tiger's Claw*. I wasn't as close as Hunter, but I hit the ship twice from above and then came around behind him. He never knew what hit him. Now we were one-on-one. I kept hitting the afterburners, turning and sliding before using my guns. It took some time against the heavy fighters, but I took out both remaining Gratha without taking any damage. Sliding is the most effective move in space combat.

Mission Hints and Synopsis:

1. Set speed to 250 KPS and work through the asteroid field that's 73,000 kilometers from Nav 1.
2. Stay away from the Jalthi's guns, especially on your sides, and be patient. Afterburner slides are especially effective against a Jalthi. Use your speed advantage wisely.
3. The two Dralthi and Ralari are 7000 kilometers from Nav 3. Hit the escorts first, then move on the Ralari from the rear. Watch out for her lasers.
4. Taunt the Gratha and use full guns against their heavy armor. Side and rear attacks are better than trading punches from the front.

Venice System
Mission 4
Omega Wing

Wingman: Hunter
Ship: Rapier

This was the mission we had all been waiting for. Take out the starbase and destroy the Kilrathi High Command for the entire sector. Terran intelligence believed the Kilrathi would expect us to attack with our capital ships, but we were sending in fighter wings instead. If we could punch through the Kilrathi defenses, our speed, firepower, and maneuverability would allow us to destroy the starbase.

I don't know why Halcyon wanted us to fly by Nav 1 where a Fralthi and fighter escort were located, because he told us to just slip by without engaging the enemy. I guess it must have been the fastest route. The starbase was located at Nav 2 and would be heavily protected by Jalthi, Gratha, and Krant — everything strong they could throw at us.

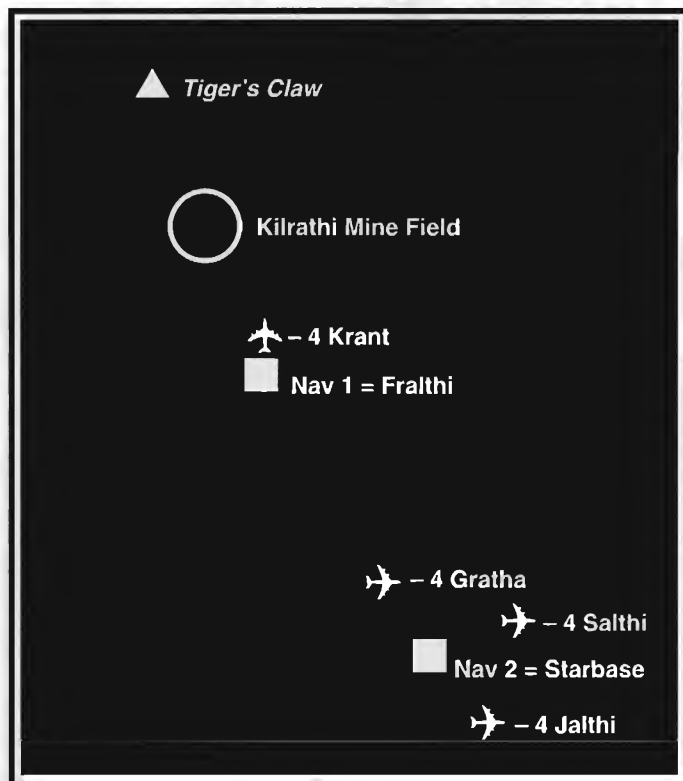
Hunter and I were really scanning the radar display when the mines showed up about 41,000 kilometers from Nav 1. Knowing speed was of the essence, I took a slight chance and kept the setting at 300 KPS instead of the recommended 250. It was a bit hairier winding through the mines, but we made it through

without any real damage. As soon as we exited the rocks, we went to autopilot for our trip to Nav 1.

We dropped out of autopilot and right into the path of four Krant who were already firing. Following Halcyon's orders, I told Hunter to keep formation and just kept kicking the afterburners and making slight turns to slide and evade their guns. Once we were past them, it was just a race to Nav 2 at full afterburners, which we won easily.

I tried to ignore the Gratha and hit the base, but I soon realized how fruitless that would be. No matter what the colonel said, we had to take out the fighters first. Otherwise, we'd never make it back to the carrier.

I told Hunter to attack my target, and locked onto the first Gratha coming in from ahead and to the right. I broke left, hit the afterburners again,



and turned back to the right to slide into a perfect shot with my neutron guns. I hit the Gratha three times, and I'm sure Hunter scored with a couple of shots as well. We saw debris and closed in for the kill. I took a hit from two of the other Gratha at the same time and my fore and rear shields plummeted. It's running time, I said to myself and spurted away. I was glad I'd locked my first target, because he was already damaged and I wanted to take advantage before he could repair and regenerate.

I ordered a break and attack so Hunter would keep the other ships busy while I finished off the first target. I switched to full guns, hit the afterburners, and slid into position for another shot. This one did the trick, and Hunter yelled that he'd taken out an enemy as well. Only two Gratha and a starbase remained.

We kept to our guns and just kept sliding around and banging the Gratha. Whenever they tried to move away, we hit the afterburners and chased them down.

I moved in on the starbase and launched two Darts as quickly as I could. From the other side of the base, four Salthi showed up with their lasers dancing. It was unbelievable. The starbase was firing lasers and what seemed to be mine-like projectiles and the Salthi's lasers streaked through space in flashes of red. If it wasn't a war, it would have been a beautiful sight.

I ordered a break and attack and turned on the Salthi. They kept trying to lead us away from the base, but we'd chase them as long as we were scoring with the guns, and turn away when they were out of range. Then we'd make another pass on the starbase. Finally, we'd taken out all the light fighters and were concentrating on the base itself. We were really hammering it, but I only had a Spiculum left. I fired our last missile and the starbase still stood. Halcyon said we couldn't destroy it with guns, but that's all I had left. I switched to full guns and used the afterburner slide to hit it hard three times in succession. I noted additional damage and thought the guns just might work after weakening the base with all the missiles.

That's when Hunter called out that four Jalthi were approaching. I told Hunter to attack my target and waited until the last second to start a barrage with the full guns. My blaster power was full and the starbase started to blow in a series of jolting explosions. I never stopped to watch, just set the nav cursor for home and hoped we could outrun the Jalthi. We made it back to the *Claw* and the Jalthi had abandoned the chase. All right!

Mission Hints & Synopsis

1. Minefield at 41,000 kilometers from Nav 1.
2. If you use autopilot to get to Nav 1, the Krant are firing at you before you have a chance to react. Just hit the afterburners and run away from them.
3. The starbase is protected by four Gratha, four Salthi, and four Jalthi, although the Jalthi won't show up unless you waste a lot of time in the dog-fights. You can take out the starbase with guns, so don't give up if you use all your missiles.
4. The only way to win the Ter-ran Medal of Valor is to ignore the Colonel's instructions and take out every enemy you encounter along the way.

After the Vega Campaign

It was the first time I had ever seen the Colonel enter the pilot's bar much less hoist a mug of Goddard's Special. The party had started as soon as word came down that the Kilrathi had abandoned the Vega Sector. Halcyon held up his mug and asked for quiet. "I'd like to propose a toast," he yelled.

It took a while to get everyone's attention. People were hooting and hollering, dancing and drinking. Knight was balancing a glass of champagne on his forehead and trying to limbo. He was drenched from previous attempts. Eventually, a semblance of order was established and the Colonel could at least be heard.

"I've been fighting the Kilrathi for almost 20 years," the colonel said, "and this is the first time the Confederation has ever claimed a major victory. We've won our share of battles before, sure, but this could turn out to be the real turning point in the war. Those blasted cats will never look at humans in the same way again."

The room erupted in whoops and cheers. Grinning, Halcyon held up his hand to calm the crowd.

"Since I won't have the chance to speak with each of you personally," he said, "I wanted to take this opportunity to thank you collectively. This is the finest group of pilots ever assembled on a space carrier and I'm proud to have been associated with each one of you. Enjoy the moment, people. To freedom!"

Halcyon, along with everyone else, raised the mug and finished off the contents in one long gulp. He wiped his chin with his sleeve, put down the empty, and left the room.

I walked around the room, trying to make sure I talked with everyone for a few minutes. I thanked the veterans, who'd flown on my wing, for keeping me alive. I congratulated the other rookies on their stellar performances, and shared a joke or two with Shotglass behind the bar. I kept looking for Maniac, and was surprised that he wasn't the center of attention. I always figured that he would be right in his element during a celebration.

I found Maniac wedged into a small alcove to the left of the bar. He was sitting alone. I walked over and took a seat.

"Lighten up, Maniac. You look like something the cat threw up on the carpet," I said.

"I didn't ask you to sit down, Prankster, and I really don't want to hear another lecture about how everything will be okay," he replied without a smile. "Most of the pilots won't give me the time of day or even play a game of grav-ball. They're all asking

the Colonel for a change in assignment when I'm scheduled to fly their wing. This duty sucks."

I left Maniac to his own misery, and tried to enjoy the party. It wasn't easy. I kept thinking of the cocky, obnoxious guy I'd met at the academy and fought against in the simulator. I didn't like him then, but I appreciated what he could do for our cause as a combat pilot. Now, in a lot of ways, I felt sorry for him, and I was worried about the effect he would have on the people on the *Tiger's Claw*. He was changing, becoming morose, aloof, and indignant. Something had to be done.

Halcyon didn't usually entertain personal meetings with pilots, preferring that all communication move through the proper channels. I was insistent, however, and found myself seated across the desk from the colonel a day later.

"Sir, we're all concerned about Maniac, but I think I have a solution to the situation," I explained. "If Maniac didn't have to fly on someone's wing, or with someone on his wing, he'd be the best combat pilot in the fleet. There's not a pilot alive who can match his instincts or skills on a one-on-one basis. He isn't much on taking orders, but we can use that to our advantage."

"Get to the point, LaFong," he said.

"I was hoping you'd talk to Admiral Tolwyn, sir. Maybe the Confederation could use Maniac on special solo missions where his impetuous nature wouldn't interfere. I'm not sure he'll survive unless we make some changes. I know I'm just a rookie pilot, sir, but I think my idea has a lot of merit."

Halcyon was surprised. "I'd never thought of anything like that, LaFong, but it might be worth a try. Everyone in the fleet is keeping a close eye on Marshall, you know. If he doesn't watch out, he'll have a Section 8 on his record and never be able to fly again. I'll talk to the Admiral."

About two days later, Halcyon called me to his office. "The admiral has turned down your idea, LaFong. Tolwyn said that a pilot who couldn't listen to a wingleader, probably wouldn't listen to whoever assigned a secret mission either. He said the TCSN was not in the habit of assigning missions based on an individual's idiosyncrasies."

Another fine example of flexibility, I thought. We'd just have to try and work things out with Maniac on the *Tiger's Claw*. I wasn't enthused by the chances for success.

The Maniac Solution

The Party's Over

After the initial euphoria had diminished, people on the *Tiger's Claw* began anticipating what might come next. With rumors of new weapons systems to be installed, some thought the *Claw* might be sent to spacedock. Other scuttlebutt mentioned patrol duty back in the Terran Sector. The common thread was that everyone thought of spending some time at home.

"It's been almost a year since I saw my wife Chen and baby daughter," noted Bossman. "I think everyone's looking forward to getting off the carrier, and taking care of personal business. We've been on emergency combat duty for a long time, and I think we're all ready for a break."

Personally, I just wanted to get out of space for a while. I liked the comraderie of life on the space carrier, and I enjoyed the spectacular views as we jumped from one sector to another. I loved the feeling of rushing through a launch tube, and, in some ways, the adrenalin rush of combat. But I was ready to go home. I hadn't seen my parents since my final year assignment on the *Formidable*. I hadn't fished, hiked, been on a date or played with my dog in more than two years.

When I returned to my cabin, I flipped the switch on the computer, activated the comm network, and looked for the latest war news. After all, Vega sector wasn't the only place we had been fighting the Kilrathi. The main story, filed just moments before I logged on, caught my attention. All communication had been lost with the colonists on Goddard in the Deneb Sector. The cause was unknown.

Just as I finished the story, I was notified of a priority message on the intra-ship network. Those messages were seldom good news, and this was no exception. Everyone was ordered to their comm stations for a general announcement at 0900 tomorrow. A pilot's briefing would follow at 1000 hours.

I shut down the system, hit the showers and headed for my bunk. Damn, I thought, it doesn't look like anyone will see home in the near future. I was almost in tears.

Operation Thor's Hammer

The Colonel's announcement and briefing didn't add a whole lot to what I had read the night before concerning the loss of communication with the Goddard colonists. Terran Intelligence Command's scan analysis indicated the use of a new Kilrathi weapons technology against the planet. At this point, however, they weren't sure what effect it had beyond the disruption in communications. Scouting teams were being sent to the planet's surface to investigate.

The *Tiger's Claw* would jump to the Deneb Sector tomorrow, make her way to the Goddard System, and provide whatever support activities were required. We wouldn't know whether our posture would become offensive or defensive until the investigation of what had taken place on the planet was completed.

Rumors ran rampant on the carrier as we prepared for our jump out of the Vega Sector. There were reports that the new weapon had wiped out the use of all electronics on the planet with an advanced Electro Magnetic Pulse (EMP) generator, but that the colonists remained alive. Others swore that the entire colony had been wiped out by a "beam" weapon of unknown origin. No one knew for sure, but we were all stunned by the turn of events.

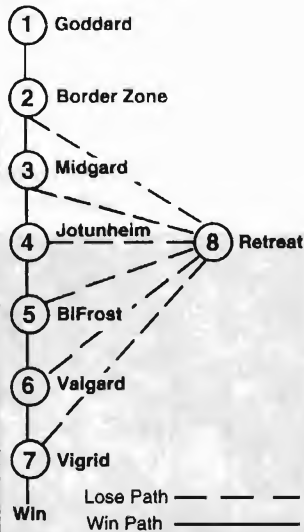
The euphoria following our success in the Vega Sector quickly subsided. We all waited for word from Goddard. Shotglass was concerned about the safety of his cousin, a colonist, and many others on the ship knew people who lived on the planet as well. We felt helpless. I told Bossman how I felt and his reply reflected his many years in the space navy.

"You can't become a part of the rumor mill Prankster. It just doesn't pay. There isn't a pilot alive who benefits from getting all worked up and emotional about something that might not have taken place," he explained. "You won't be able to change anything anyway."

"I've learned to just trust my superior's judgement. We're in one of those need-to-know situations, and we won't understand what really happened or what we'll do about it until the Colonel decides the time is right. The best thing you can do is to try to stay calm. One thing's certain, we'll see action before we leave the Deneb Sector, so save your adrenalin for then."

Heading to Goddard

Secret Missions 1 Mission Tree



Author's Note

In the previous section of the book I provided a narrative account of each mission I flew, outlining specific tactics for each enemy encountered. Since that style can be somewhat repetitious, on the following pages I'll provide more of a straightforward approach, indicating when and where enemies were located, but concentrating on general strategy instead of specific tactics.

Goddard System
Mission 1
Alpha Wing

Halcyon was frantic. We would launch as soon as the *Tiger's Claw* reached Goddard Colony. The fate of the colony was unknown, but the Confederation was bringing in supplies in case relief efforts were needed. Hunter and I, flying Hornets, would make sure the transports reached their destinations.

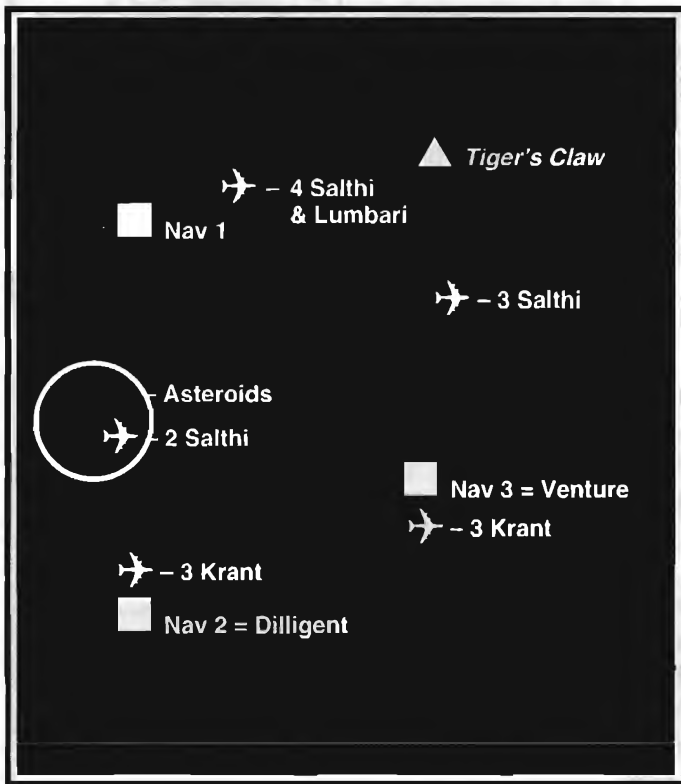
Mission Profile:

Proceed via Nav 1, engaging all Kilrathi fighters and capital ships. Provide support for the *Hickok*, a Dilligent-class sport, until she jumps at Nav 2. Rendezvous with the *Marciano*, a Venture-class corvette, at Nav 3 and escort her back to the carrier.

Mission Chronology:

1. Four Salthi and a Lumbari 18,134 kilometers from Nav 1.
2. Two Salthi in asteroid field 36,740 kilometers from Nav 2.
3. Three Krant attack the *Hickok*, 13,163 kilometers from Nav 2.
4. Three Krant attack the *Marciano*, 9,000 kilometers from Nav 3.
5. Three Salthi attack the *Marciano* 31,000 kilometers from *Claw*.

Wingman: Hunter
Ship: Hornet



Post-Mission Analysis:

Our success hinged on meeting the armored Krant near Nav 2 and 3 at full blaster power, with missiles intact, and without internal damage. As a precaution, we avoided the asteroids once we destroyed the Salthi found there. We just headed to the left side and skirted the edge of the rocks.

We went after the 16.6-ton Krant with both of us attacking the same target. Using our speed advantage to gain position, guns and missiles from the rear usually took out our targets. Side attacks with guns and Darts were also effective. We constantly taunted the enemy, but always went after the Kilrathi pilot who still attacked our charge. Afterburners were in use constantly to evade missiles and lasers, and to initiate slides to the left or right.

**Goddard System
Mission 2
Kappa Wing**

The *Tiger's Claw* was streaking toward Goddard and the fighter wings were ordered to help clear a path in front of the carrier. We still didn't know what would be found when we arrived at the colony.

Mission Profile:

Jump to Nav 1 and destroy any enemy targets encountered at the nav point or along the way. Proceed to Nav 2 and take out the Kilrathi Dorkir before it can jump out of the system.

Mission Chronology:

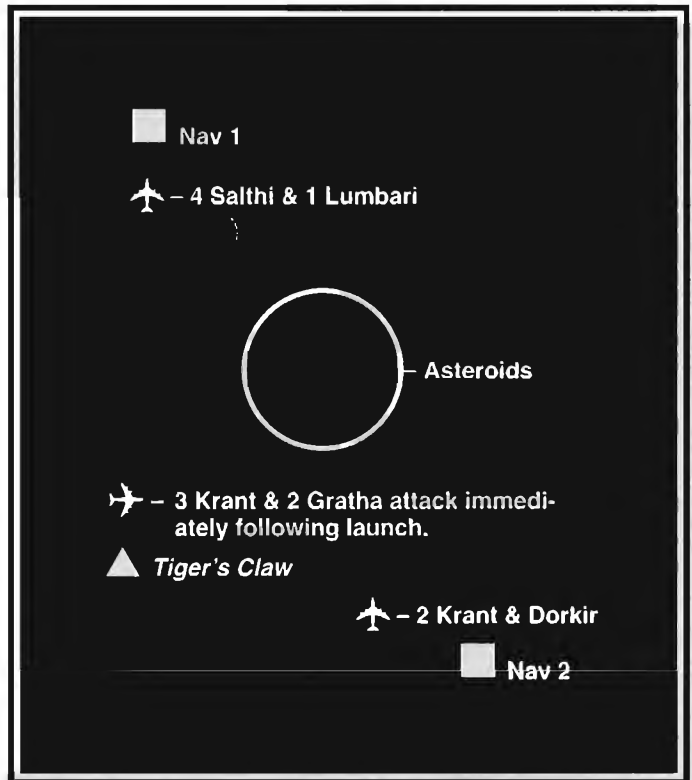
1. Three Krant and two Gratha attack immediately after launch.
After hitting us, they go after the *Tiger's Claw*.
2. Four Salthi and a Lumbari 14,889 kilometers from Nav 1.
3. Asteroid field discovered 60,000 kilometers from Nav 2.
4. Dorkir and two Krant found 14,702 kilometers from Nav 2.

Post-Mission Analysis:

It's a good thing I was flying with a veteran like Hunter, because the three Krant were on us as soon as we launched from the carrier. They would have inflicted heavy damage on our Hornets if we hadn't hit the afterburners right away, whizzed past them, and turned around to attack from the rear with our lasers and Darts. As soon as I saw the two Gratha come in to join the attack, I saved my Javelins for them.

When we hit the Krant and Dorkir at Nav 2, we both attacked one of the fighters to take it out quickly. Then I sent Hunter after the second Krant while I attacked the Dorkir with a classic circling rear attack. I didn't want to waste any time in going after the capital ship, since we knew it would try to jump out of the system as soon as possible.

Wingman: Hunter
Ship: Hornet



Border Zone
Mission 1
Epsilon Wing

Now we knew that the Goddard colony had been completely destroyed by the Kilrathi weapon. A quarter-million civilians had lost their lives. We would chase the departing Kilrathi fleet and attempt to destroy the vessel carrying the new weapon.

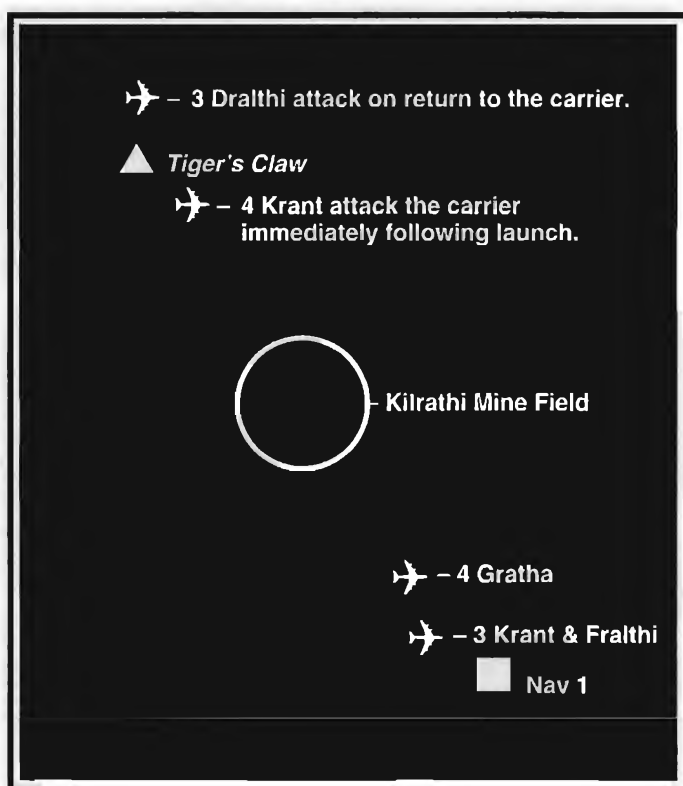
Mission Profile:

Angel and I would fly Scimitars on this mission as part of the Blue Devil Squadron. Our goal was to fly to Nav 1 and engage and destroy the bogies found there.

Mission Chronology:

1. Four Krant attack the *Claw* immediately following launch.
2. Kilrathi mines encountered 41,280 kilometers from Nav 1.
3. Four Gratha attack 12,712 kilometers from Nav 1.
4. Fralthi and 3-Krant fighter escort at Nav 1.
5. Kilrathi mines encountered 42,000 kilometers from the carrier.
6. Three Dralthi are attacking carrier on return trip.

Wingman: Angel
Ship: Scimitar



Post-Mission Analysis:

The key to this mission was our battle against the Gratha and Krant near Nav 1. I never find that capital ships, like the Fralthi, present much of a problem when the fighter escorts have first been destroyed. Seven medium and heavy fighters, however, in quick succession, test any pilot — especially from a Scimitar's cockpit.

Constant sliding maneuvers using full afterburners and quick, hard turns protect against damage while providing great offensive positioning against enemies with stronger armor and shields. Against the Gratha, the 40-KPS speed advantage helped us gain a rear position and allowed us to lock onto the engine's heat with our Javelin missiles. We weakened the rear shield with guns, hit the afterburners to close, and launched heat-seekers.

Border Zone Mission 2 Epsilon Wing

When the *Tiger's Claw* jumped into the Goddard System, its ultimate mission was still unknown. When the decision was made to follow the enemy into Kilrathi space, a supply convoy was sent to the carrier. After all, once we hit enemy space we would be alone.

Mission Profile:

The Sleipnir Convoy, located at Nav 1, was heading toward Nav 2, where it would jump out of the system. Angel and I were ordered to escort the convoy and guard it until the jump.

Mission Chronology:

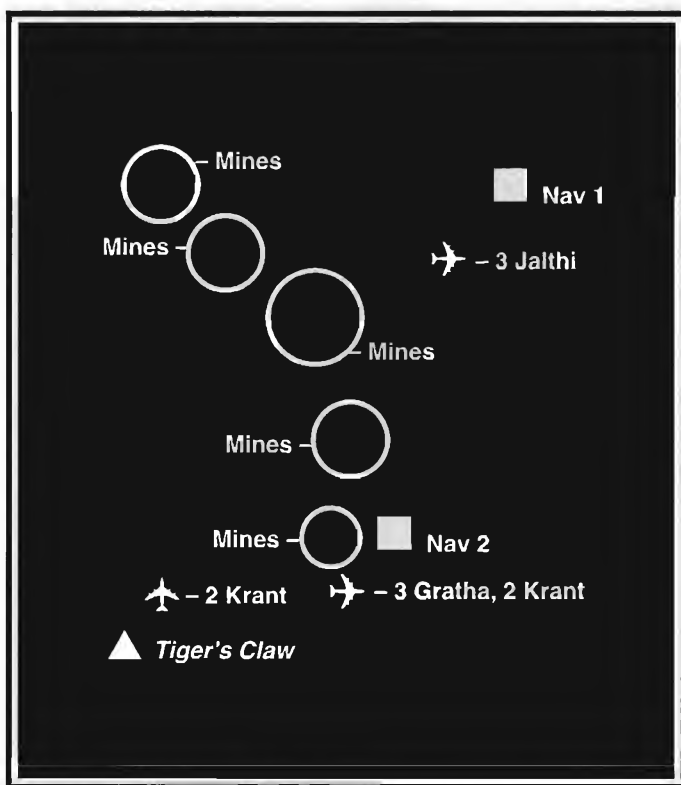
1. Two Krant attack at 78,000 kilometers from Nav 1.
2. Mine field discovered 61,000 kilometers from Nav 1.
3. Three Jalathi attack when 19,000 kilometers from Nav 1.
4. Rendezvous with convoy at Nav 1.
5. Go around mines found 12,000 kilometers before Nav 2.
6. Wait for Drayman jump at Nav 2.
7. Three Gratha and two Krant attack 33,000 kilometers from the carrier.

Wingman: Angel
Ship: Scimitar

Post-Mission Analysis:

The Jalathi who attacked near Nav 1 were the greatest challenge. They carry the heaviest firepower, armor and shields in the enemy fleet.

Two Jalathi attacked when we were 19,000 km from Nav 1, and we used our speed and maneuverability to avoid their initial strike. We attacked separate targets. I used a dumb-fire to force the Jalathi into a defensive maneuver, then rushed in close to bring down the shields with the guns. A Javelin took him out from the rear. Hunter handled the second Jalathi and that allowed us to team up and strike the third. If we hadn't taken him out, the Draymans would have been in jeopardy when we met them at Nav 1.



Midgard
Mission 1
Delta Wing

Colonel Halcyon nervously told us that the Kilrathi had captured the *Falstaff*, a Drayman carrying weapon design specifications, troop movement information, and tactical maps. We would move against it, but tip our hand that we were following the Kilrathi fleet. It didn't bode well for the future.

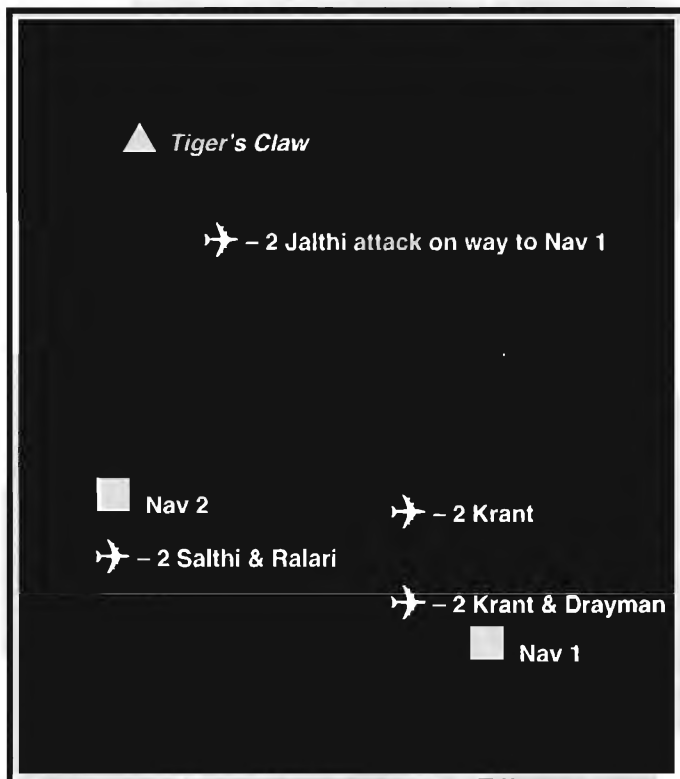
Mission Profile:

Bossman and I were Delta Wing, and we were ordered to intercept and destroy the *Falstaff* at Nav 1. After completing that section of the mission, we were to cruise to Nav 2 and engage any enemy targets we sighted.

Mission Chronology:

1. Two Jalathi attacked when 71,000 kilometers from Nav 1.
2. Two Krant scouts appeared 16,177 kilometers from the first nav point, soon followed by the Drayman and a 2-Krant escort.
3. A Ralari with a two-Salthi escort was engaged 18,000 kilometers from the second nav point.

Wingman: Bossman
Ship: Scimitar



Post-Mission Analysis:

We were patient with the two Jalathi who screamed into view soon after launch. We carefully selected our shots, made sure we were at full blaster power from the rear, and concentrated on avoiding damage. We wanted to reach the Drayman and her escorts with all our missiles and little, if any, damage. Even though we held an 80 KPS advantage on the Jalathi, our afterburners smoked at battle's end.

We totally ignored the Drayman while we went after the fighter escort. To avoid allowing the Krant pilots to regenerate shields, I locked on targets and stayed with them until destroyed. Bossman used his missiles early in the mission, but I saved mine for the Drayman and Ralari, and always attacked the same spot on those ships.

Midgard Mission 2 Gamma Wing

The Kilrathi knew we followed, and we expected a greater concentration of enemy fighters as we continued our missions. The Reavers, an elite corps of Marines, had captured a Dralhti but needed assistance in bringing their prize back to the carrier. We really needed the information from the enemy ship.

Mission Profile:

Gamma Wing, with Bossman again on my wing, was to intercept the captured Dralhti near Nav 2 and protect her on the journey back to the *Tiger's Claw*. We would return via Nav 3, using the asteroid field for cover.

Mission Chronology:

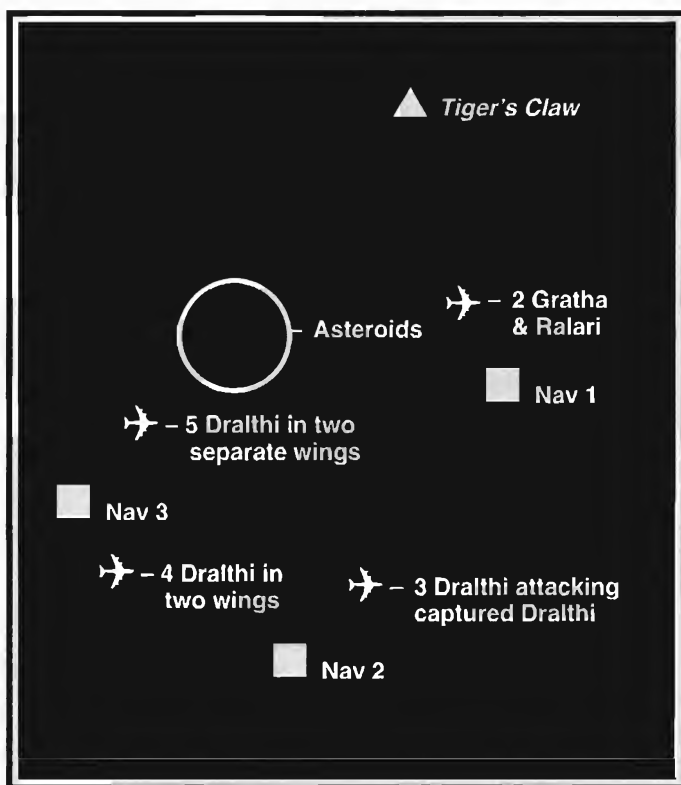
1. Two Gratha and a Ralari found 11,351 kilometers from Nav 1.
2. The captured Dralhti was under attack by three Dralhti 15,192 kilometers from Nav 2. We rushed to intercept.
3. Two wings of Dralhti, two ships in each, attacked when 15,001 kilometers from the third nav point.
4. Two wings of Dralhti attacked when 63,201 kilometers from the *Tiger's Claw*.

Wingman: Bossman
Ship: Scimitar

Post-Mission Analysis:

With hindsight, speed was the factor that made the difference. It was more a matter of luck than anything we planned. We used all our missiles against the Gratha and Ralari and took the ships out quickly. As it turned out, that allowed us to find the captured Dralhti before the attacking medium fighters had inflicted much damage. Taunts were effective.

We stayed away from the Dralhti at long distance since their lasers were an advantage. Up close, we hit them from the front and banged away with our stronger mass drivers. When they turned away, we followed with afterburners and kicked them in the tail.



Jotunheim
Mission 1
Beta Wing

"The Kilrathi fleet is moving toward the asteroids, Major, and we can anticipate that they will use the fields to hide their fighter wings," Mariko noted as we headed to the launch bay. "I fear we will encounter many enemy fighters on this mission. Good luck."

"It's a good bet!" I yelled to Spirit. "Save your missiles."

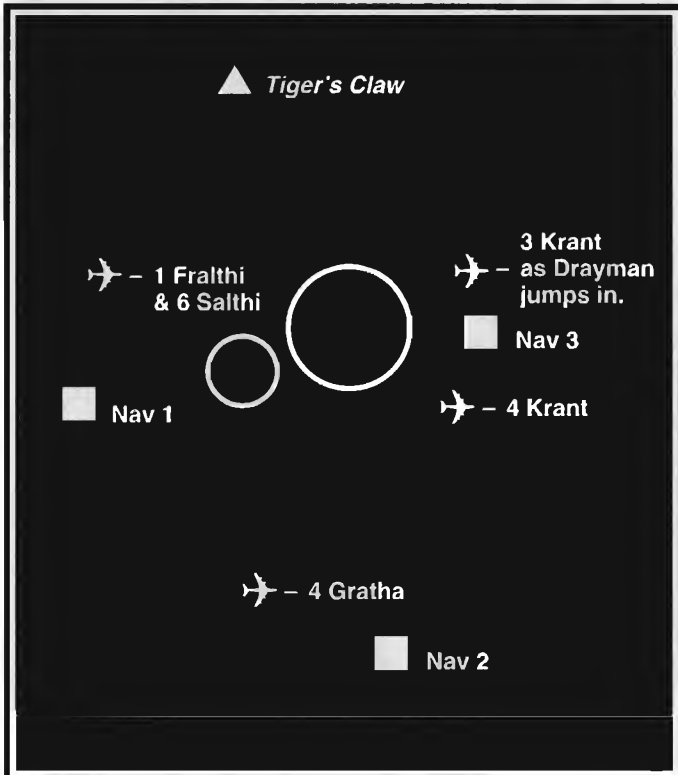
Mission Profile:

We were ordered to fly to three navigation points, meeting a Drayman along the way and providing escort to the safety of the *Tiger's Claw*. Spirit and I would fly Raptors.

Mission Chronology:

1. 20,000 kilometers from Nav 1 we met a Fralthi escorted by two wings of Salthi. Three ships were in each wing.
2. Four Gratha met us 15,079 kilometers from Nav 2.
3. Four Krant attacked when 13,560 kilometers from Nav 3.
4. Three more Krant appeared and attacked just as the Drayman we were to protect jumped in at Nav 3.

Wingman: Spirit
Ship: Raptor



Post-Mission Analysis:

With 18 enemy fighters encountered between three nav points, we were fortunate to be flying the Raptor. The neutron guns and the array of weapons were integral to our success. We used our mass drivers against the light Salthi fighters, only switching to full guns to take out the Fralthi. We took our time against the huge ship and didn't use any missiles.

The Gratha were a nuisance, but nothing compared to the quick succession of seven Krant who attacked near Nav 3. That's when we pulled out all the stops, sending image-recognition and Spiculum missiles against the enemies after weakening them with full guns. We stayed near the Drayman, even breaking attack from fighters that tried to lead us away.

Confederation Intelligence thought the Kilrathi were setting up an ambush, so they decided to launch all our fighter wings in an effort to counteract their strategy. Spirit and I would take the bait, flying right into the middle of the anticipated melee.

Jotunheim Mission 2 Alpha Wing

Mission Profile:

We would fly a three-point patrol route, saving our heavy weapons until we reached the ambush location at Nav 3.

Mission Chronology:

1. A wing of Salthi attacked 14,874 kilometers from Nav 1.
2. A second wing of Salthi were escorting a Dorkir sport at Nav 1.
3. Three Krant attacked in the asteroids 9,815 kilometers from Nav 2.
4. Two Gratha hit us 20,263 kilometers from Nav 3.
5. Two more Gratha and a Fralthi were discovered at Nav 3. A third Gratha came out from behind the Fralthi as we attacked.

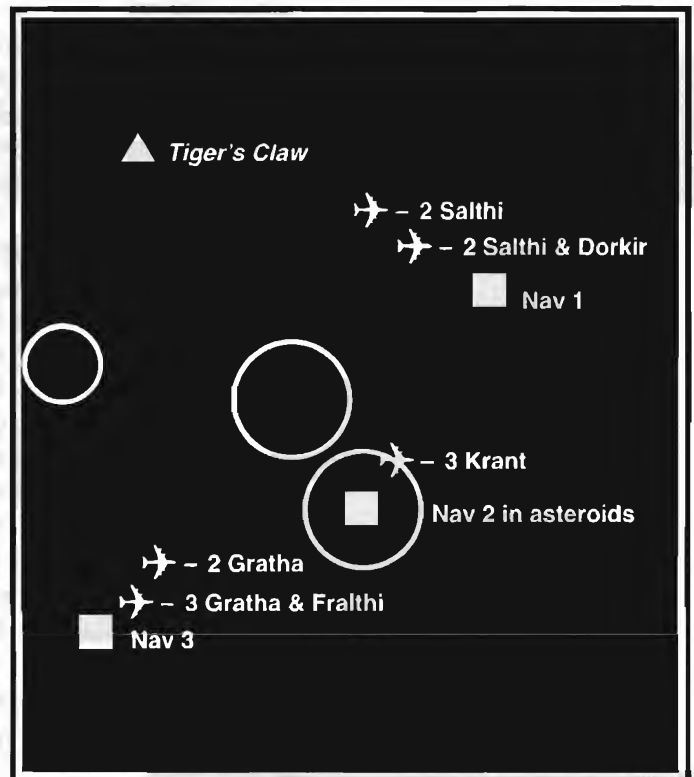
Wingman: Spirit
Ship: Raptor

Post-Mission Analysis:

The Salthi and Dorkir were easy work for our neutron guns. We hit the Salthi from the side and the capital ship from the rear. With stronger armor and shields, we just kept firing until blaster power was low, hit the afterburners to run away, then attacked again. We destroyed two Salthi in frontal attacks.

Our shields regenerated by the time we hit the asteroids and the Krant attacked. I kept my speed to 100 KPS and nudged the afterburners during the attack. I used full guns, while Spirit launched three missiles.

The ambush didn't really materialize, at least not in the expected numbers. Against the heavy Gratha, I used my Javelins, Pilums, Porcupine, and full guns while avoiding damage with my better speed and afterburners.



Between Missions

I was surprised when Colonel Halcyon so quickly brushed off Major Taggart's request to ground Maniac. I guess the Colonel didn't consider the mission briefing room the correct forum for such a request, and I'm sure his snap decision was also affected by our depleted pilot roster. We'd taken some heavy losses since we'd jumped into the Deneb Sector.

I knew the Colonel was as concerned about Maniac as the rest of us, but he didn't have the day-to-day contact with the young pilot that we did. He was aware of Maniac's recurring suicidal dream, but he didn't hear about it from the source. He didn't realize just how consumed the lieutenant was by the vision. The colonel didn't hear the absolute terror in Maniac's voice or observe the maniacal look in his eyes when he told of his dream. It was scary.

I talked to Paladin when he returned from his last mission. Maniac had flown as wingman.

"I've got to admit that the lieutenant hasn't lost a second in reflex time and he can still put a Hornet, Raptor, Scimitar, or Rapier through its paces better than anyone," he explained. "The problem is that he's taking every mission personally, and trying single-handedly to take out every enemy fighter. He's not only a danger to himself, but to his wingleader as well. You never know what he's going to do next."

I mentioned that Maniac might be trying to make up for the unfortunate incident in which he had destroyed one of our own sports with a crew of 16. Something like that would work on anyone's psyche, I noted.

"You might be right, Prankster," he said, "but that just strengthens my view that we need to take Maniac out of space and get him some help. Let me tell you what happened yesterday. We'd run into a squadron of three Jalthi and I ordered Maniac to break and attack. The battle was going well and we were both using our speed to avoid damage. We'd destroyed two of the cats and I was running a wide circle pattern to bring my blaster power up when I heard this eerie laugh. It was Maniac.

"I switched views and saw Maniac heading straight into the six-shooters of the last Jalthi. He was getting pounded and I could tell he was close to going down. He survived the first run, but I knew his weapon was gone, his missiles were expended, and his computer system was damaged. His only chance was to run and hide.

"Well, Maniac didn't run. I rolled, turned, and hit the afterburners to bring my nose around on the Jalthi. I kept yelling for Maniac to form on my wing, but he just turned, hit the afterburners, and aimed for the heavy fighter. It was crazy. He wasn't firing any guns, just heading in fast to ram the target. I was at full guns and luckily hit the Jalthi with three quick shots. The enemy fighter exploded and Maniac went right through the center of the debris. I'm not sure of his motive, but it was a suicide run if I've ever seen one. I don't like flying with anyone who wants to die."

I knew the pressure of our being alone in Kilrathi space was causing problems for a lot of our pilots. Most of them, however, didn't carry the same burden as Maniac when we entered the system. They could handle it, he couldn't.

I knew the Colonel's hands were tied in many ways. The *Tiger's Claw* carried medical staff, but we didn't have any psychiatrists or psychologists on board. There was no way we could leave the sector at this point in the battle, and I think the Colonel felt that Maniac's condition would deteriorate more rapidly if he was confined to the carrier and couldn't fly. It was a judgment call, and I couldn't say the Colonel wasn't right.

More than anything, I was ticked off at Admiral Tolwyn. He had given only cursory attention to our earlier request to send Maniac out on solo missions. In that scenario, Maniac might have been able to regain his self-esteem and find himself. At least it would have given him a chance.

I felt bad for thinking it, but I really hoped I wouldn't have to fly with Maniac anymore. Most of the pilots felt the same way.

Jotunheim
Mission 3
Beta Wing

Colonel Halcyon said we had an emergency. The *Tiger's Claw* had received a distress call from the *Johann*, an Exeter-class sport. Apparently the ship needed protection while under repair.

Mission Profile:

Patrol Nav 1 for enemy fighters first, then go to Nav 2 and guard the Exeter-class ship until she completes repairs and jumps out.

Mission Chronology:

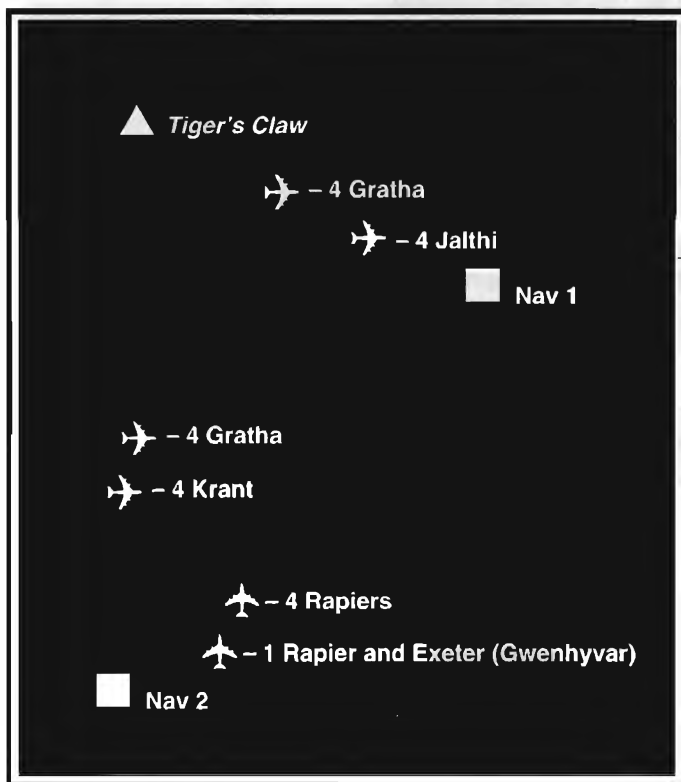
1. Four Gratha attacked 55,260 kilometers from Nav 1.
2. Four Jalthi hit when 15,000 kilometers from Nav 1.
3. Four Rapiers attacked when 19,800 kilometers from Nav 2.
4. A Rapier and the Exeter appeared 8,000 kilometers from Nav 2.
5. Four Krant, in two wings, and four Gratha started blasting away when we were 53,444 kilometers from the carrier.

Wingman: Bossman
Ship: Raptor

Post-Mission Analysis:

I don't know how Intel could have been so wrong. This mission was the most bizarre I'd ever flown. As it turned out, the mission was the result of a bogus radio message from the Kilrathi. It wasn't the *Johann*, but the mythical *Gwenhyvar* that appeared at Nav 2. They were trying to draw us into an ambush and they almost succeeded. I knew something was wrong when Rapiers attacked our position before we reached the Exeter, so I was prepared for something unusual.

Our guard mission turned into a search-and-destroy and it's a good thing we were flying Raptors. We ran up against 22 heavy and medium Kilrathi fighters, and only our constant use of afterburner slides, and rolls and turns, allowed us to survive. Our complement of missiles was expended against the Jalthi. It would have been suicide if we'd been flying Hornets or Scimitars.



We were pretty sure the ship carrying the new Kilrathi weapon was in the area. In fact, a large ship of unknown type had been identified in this section of open space. In addition, Intel thought that Kilrathi capital ships were running low on fuel and that a fuel depot was located here.

Mission Profile:

Paladin and I would scout three navigation points, searching for the Kilrathi fuel depot. We were ordered to engage and destroy any enemy ships encountered during our patrol.

Mission Chronology:

1. Three Jalathi raced straight toward us when we were 14,697 kilometers from Nav 1.
2. A Ralari with two Krant as escorts was discovered 14,861 kilometers from Nav 2.
3. Two wings with three Jalathi in each were protecting a Kilrathi capital ship near Nav 3, 55,957 kilometers from the carrier.

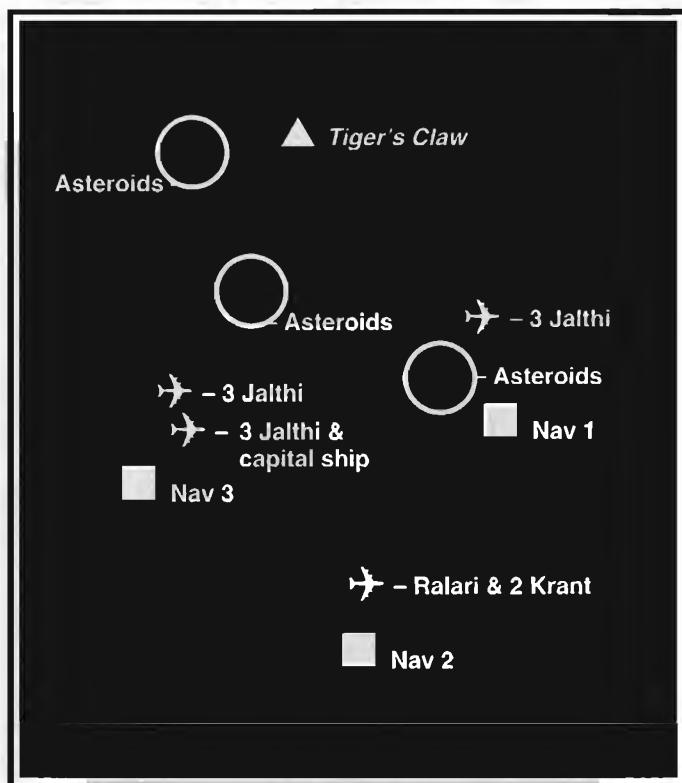
BiFrost – Kilrathi Space Mission 1 Psi Wing

Wingman: Paladin
Ship: Raptor

Post-Mission Analysis:

Since we engaged nine of the heavy Jalathi fighters on this mission, our success depended upon avoiding their tremendous firepower. I signaled break and attack every time we hit a wing, and either performed a roll and turn followed by an afterburner kick, or an afterburner slide using my full guns to score some early hits.

The Jalathi were so tough that I always locked my target. In a confusing dog-fight, I didn't want to lose sight of an enemy fighter that I'd damaged and give them time to make repairs or regenerate shields. We used speed to get behind the fighters and attack their weakest 10-cm rear armor, and kept our Porcupine ready in case a six-shooter dropped in behind us during the fight.



BiFrost – Kilrathi Space Mission 2 Theta Wing

So many Raptors had been damaged that we would be reassigned to Scimitars while the techs attempted repairs on the heavier fighters. Previous patrols had pinpointed the location of the supply depot. It would be our ultimate goal.

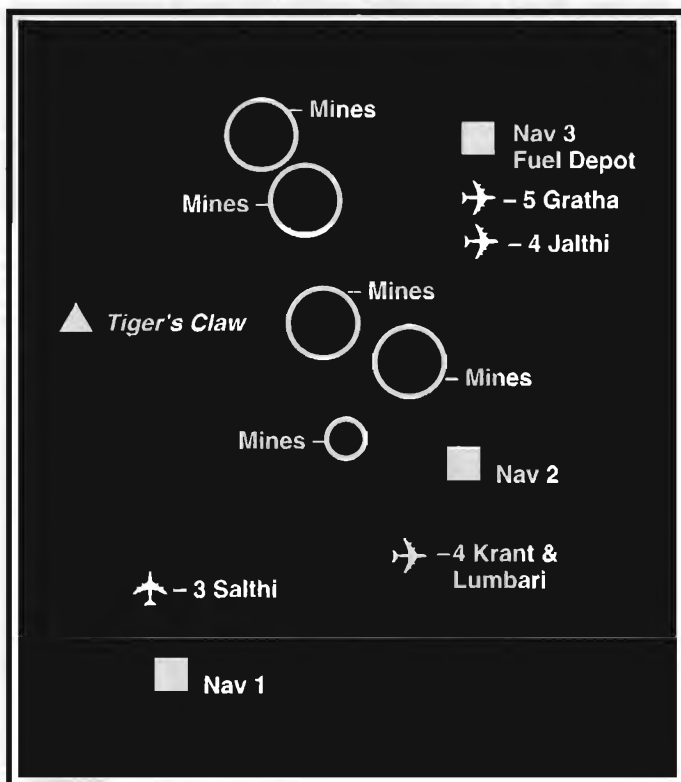
Mission Profile:

Colonel Halcyon told us to cruise to the supply depot located at Nav 3, via two other navigation points. Along the way, we were ordered to clear out any enemy ships encountered.

Mission Chronology:

1. Three Salthi attacked 14,829 kilometers from Nav 1.
2. Two Krant encountered 15,241 kilometers from Nav 2. Two Krant and a Lumbari appeared following the first dogfight.
3. Four Jalathi formed the advance guard for the fuel depot and starbase. We hit them when 17,502 kilometers from Nav 3.
4. The fuel depot and five Gratha were located at Nav 3.
5. Kilrathi mines discovered 49,000 kilometers from the carrier.

Wingman: Paladin
Ship: Scimitar



Post-Mission Analysis:

Knowing our main target would be well protected, I saved my missiles for the final assault. With only mass drivers armed, it would take forever to destroy such a large target with our guns. As it turned out, the target was tough to destroy even with my full complement of missiles.

There is so much armor and shielding on a starbase/depot that we had to just keep attacking the exact same point to have any chance at success. On the first run, I circled the starbase until I found a location where the Javelins could lock onto a heat signature. Then I just continually attacked that point, unleashing two Darts on the first run and my heat-seekers on the second. Ten more passes with guns only destroyed the target.

The Killer Bees had captured a Kilrathi ship that yielded strike assignments in the Vega Sector. If we could get back to Vega, we would be able to set ambushes against their fighters.

Mission Profile:

Since we were located where the fuel depot had been, the colonel thought we could intercept Kilrathi ships coming in that were unaware of its destruction. He told Iceman and me to fly a Comet-style patrol in which we would circle the carrier, then fly to three known Kilrathi jump points.

Mission Chronology:

1. We circled the carrier but didn't find any enemy fighters.
2. Three Krant appeared 14,575 kilometers from Nav 1.
3. Two Lumbari found 65,806 kilometers from Nav 2.
4. Three Gratha and a Ralari found 14,796 kilometers from Nav 2.
5. Four Jalthi attacked us when 20,077 kilometers from Nav 3.
6. Fralthi engaged at Nav 3.
7. Attacked three Krant 48,000 kilometers from the *Tiger's Claw*.

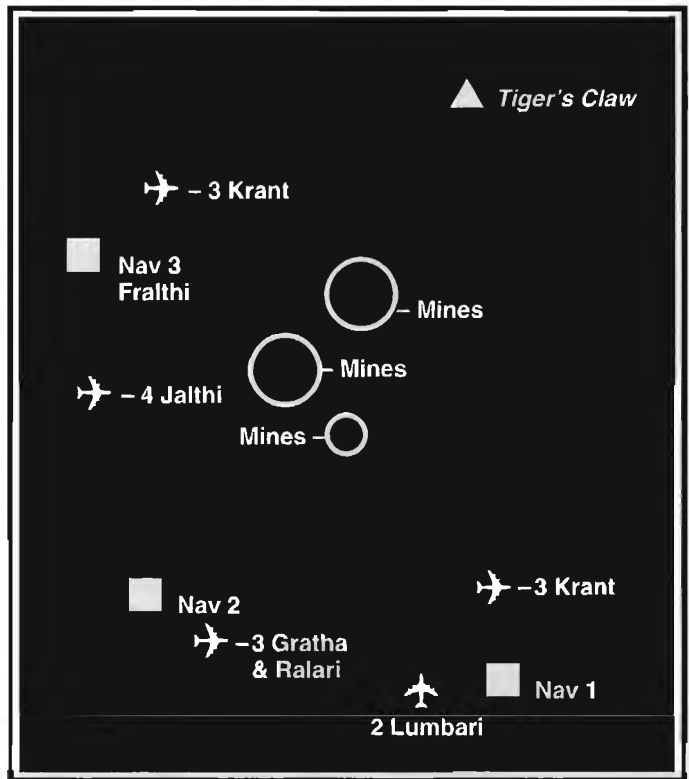
BiFrost – Site of Depot Mission 3 Sigma Wing

Wingman: Iceman
Ship: Rapier

Post-Mission Analysis:

Since we were flying Rapiers, we had the laser cannons to use at long range and the neutrons for close-in dogfighting. Combined with our dumb-fires, image-recognition and Friend-or-Foe missiles, our arsenal provided a lot of flexibility.

Our basic strategy was to take advantage of our strengths. With a tremendous speed advantage over any enemy fighter, we stayed at long range and blasted away with the lasers until we had damaged the enemy's shields. Then we moved in close to finish the job with missiles, full guns, or neutrons. We kept a finger on the afterburners and just ran away when attacked.



Valgard System Mission 1 Mu Wing

The super-dreadnaught Sivar, carrying the secret weapon, was near and running low on fuel. We couldn't go after it yet, because too many Kilrathi fighters and sports were around to provide protection. We would take care of that on this mission.

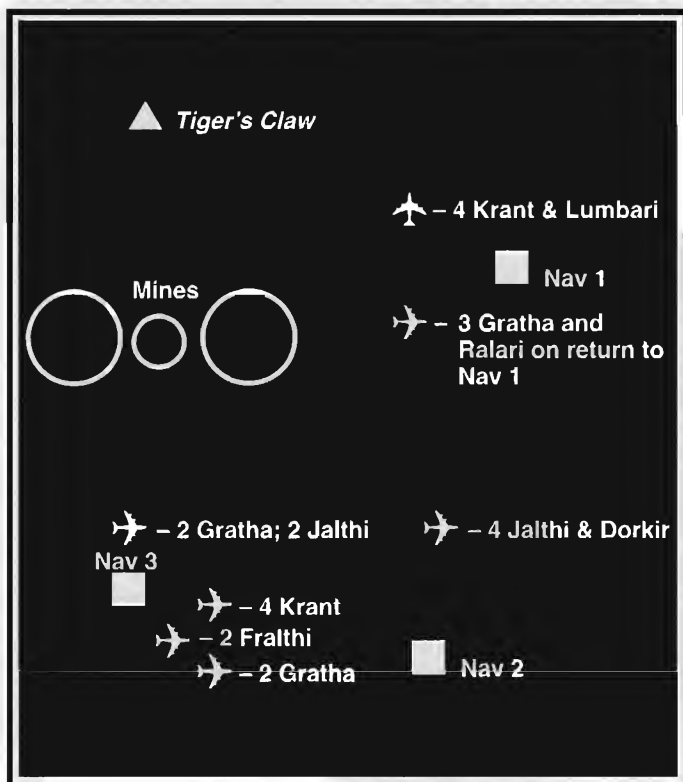
Mission Profile:

As Colonel Halcyon said, "Be cool and cruel." Our three-point search-and-destroy route was designed to engage as many Kilrathi ships as possible. To avoid a minefield, we would return via Nav 1 instead of heading home from Nav 3.

Mission Chronology:

1. Four Krant escorted a Lumbari 14,793 kilometers from Nav 1.
2. Two wings of Jalthi, two ships in each, protected a Dorkir when we were 14,770 kilometers from Nav 2.
3. Four Krant, two Fralthi, and two Gratha were in our sights when we were 24,747 kilometers from Nav 3.
4. Two more Gratha and two Jalthi joined the dogfight as we approached Nav 3.
5. Three Gratha and a Ralari appeared when we returned to Nav 1.

Wingman: Iceman
Ship: Rapier



Post-Mission Analysis:

When Iceman and I talked after the mission, we were amazed that we had survived. Twenty-three ships had fallen to our guns and missiles.

I adopted a defensive posture throughout the mission, concentrating on avoiding damage to our ships instead of inflicting damage on the others. When Iceman or I was hit hard, I had Iceman form on my wing and we ran until repairs and regeneration were completed. Whenever I damaged a target, I called for Iceman to join my attack and we stayed with the enemy until he was destroyed. We were fortunate to be flying Rapiers that could travel at 450 KPS.

**Valgard System
Mission 2
Mu Wing**

With the destruction of the fuel depot/starbase, many Kilrathi fighters were stranded in space with nowhere to go. The Colonel was positive they would launch an attack on the *Tiger's Claw*.

Mission Profile:

Launch and protect the carrier against incoming wings of Kilrathi fighters. As soon as the wings are destroyed, return to the *Tiger's Claw* for an immediate jump out of the system.

Mission Profile:

1. Two wings with two Krant in each attacked from ahead and to the right immediately following launch.
2. Three Jalthi attacked from behind and below.
3. Three Gratha and three Krant attacked.

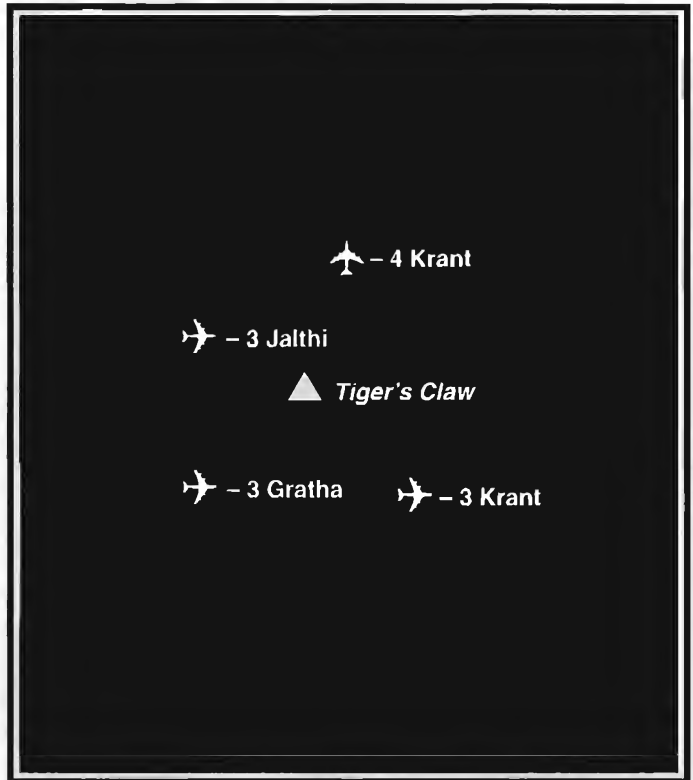
Post-Mission Analysis:

Our taunts, designed to draw the fighters away from the carrier, were effective only about 50 percent of the time. In response, we always carried the attack to the fighters who didn't respond and continued to attack the *Tiger's Claw*.

Wingman: Iceman
Ship: Rapier

While enemy guns and missiles are always a threat, dogfighting in close to the carrier increased the risk of high-speed collisions. After a few near-misses, we restricted the use of our afterburners, employing them to race away from the carrier and then circle back to attack. The strategy was effective, but when a Jalthi's hammering your shields, you have to take a chance and fire the burners anyway.

Instead of keeping a finger on the afterburners, we kept a close eye on the radar screen to make sure our maneuvers were safe. The carrier can take a lot of damage, but we went after the Jalthi exclusively when they appeared since they inflict the most damage.



Vigrid System
Mission 1
Omicron Wing

We had discovered the location of the Sivar, and the Kilrathi knew it. Their only chance to save the secret weapon was to launch a massive attack on the *Tiger's Claw*.

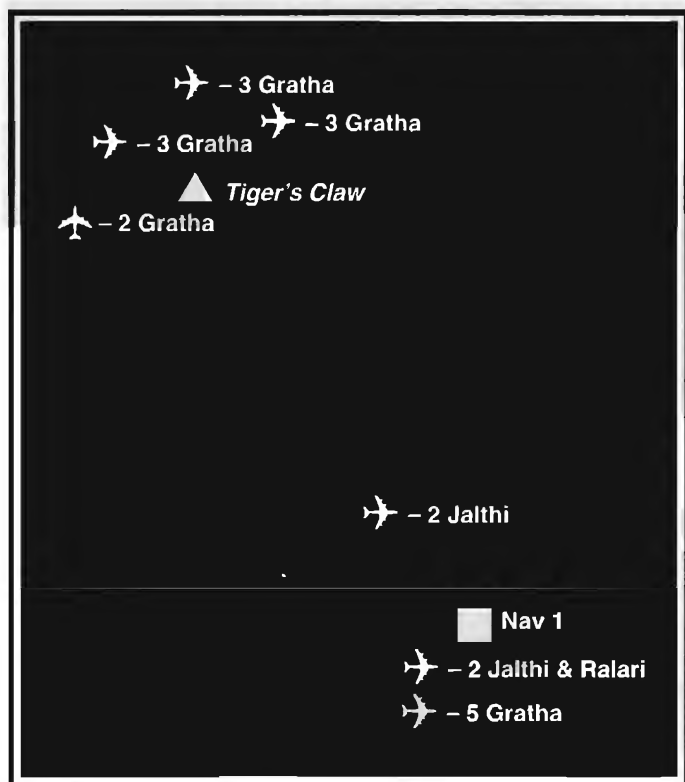
Mission Profile:

While other wings would shield the carrier from impending attack, Omicron would head to Nav 1 to check out an unknown bogie before returning to help protect the *Tiger's Claw*.

Mission Chronology:

1. We attacked two Jalthi when 14,864 kilometers from Nav 1.
2. Two more Jalthi, escorting a Ralari appear when we reach the first navigation point.
3. Five Gratha flew in to protect the Ralari.
4. Four wings of Gratha, 11 ships in all, attacked the carrier. Only two were there when we arrived, but other waves appeared during the initial dogfight.

Wingman: Knight
Ship: Rapier



Post-Mission Analysis:

If we hadn't been aggressive with the Jalthi at Nav 1, we would have been in trouble when the five Krant joined the battle. Luckily, we hit the Jalthi with full guns and didn't hold back on the use of missiles either. We ran circles around the Jalthi once we'd evaded their first pass with the guns, and that allowed us to hit their rear shields and armor. In the Rapier I figured Knight could avoid missiles, so I launched the Pilum first and then followed with the IRs. The missiles weakened the enemies enough that a few direct hits with full guns sent them screaming about the black void.

After the Jalthi, it was sliding time. We stayed with the afterburners and made hard turns to slide into attack position. At the carrier, we added insult to injury with constant taunts.

Vigrid System Mission 2 Omega Wing

This was the mission we had been working toward. We knew the location of the Sivar and we were preparing to blow it away. Colonel Halcyon decided to launch strike wings from two different locations, hoping to confuse the Sivar's defenses. Omega was part of the first launch, then the carrier would move to Nav 3 and send more fighters into space.

Mission Profile:

Take out the Kilrathi advance forces around Nav 1, then move on the Sivar at Nav 2. Rendezvous with the *Tiger's Claw* at Nav 3.

Mission Chronology:

1. We hit asteroids when 40,000 kilometers from Nav 1.
2. Two Krant were guarding a Dorkir 12,000 kilometers from Nav 1.
 1. Soon after, two more Krant joined the dogfight.
3. Four Krant attacked 19,679 kilometers from Nav 2. During the dogfight we spotted the Sivar with two Krant escorts.
4. During our battle with the Sivar at Nav 2, five Jalathi and nine Gratha attacked in multiple waves.
5. On return to carrier, four Krant attacked near Nav 3.

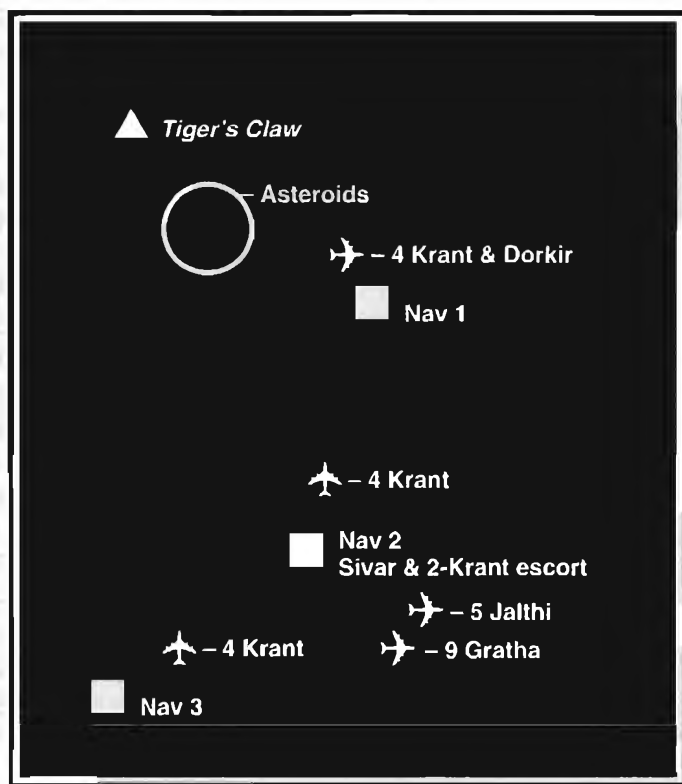
Wingman: Knight
Ship: Rapier

Post-Mission Analysis:

You can't make many mistakes and still destroy 22 enemy fighters in one dogfight. We didn't make any.

Every afterburner slide against the Jalathi, and there were plenty, avoided their fire and put us in position to inflict heavy damage with full guns. At long distance we hit the Krant with lasers, then used our speed to move in close, hit hard with the neutrons, and race away at full afterburners.

Once the fighters were gone, the Sivar was an exposed, plodding enemy. I launched all my missiles, then just kept attacking from the rear — and attacking and attacking.



After the Secret Missions

I was tired of combat, of death, of flying, and of space. I wanted to feel grass under my feet and wind against my face. I wanted to talk about things other than ships, weapons, strategy, and tactics. People who hadn't experienced war in space could never understand the complex emotions it evoked. I wished I hadn't either.

I never had any doubts about our goals. I was ecstatic that we'd destroyed the Kilrathi weapon that had taken the lives of a quarter-million colonists. The Confederation had no choice in the path it had taken. I guess it was the conversation with Paladin, where he brought up the issue of genocide, that started me thinking.

How can you really win a war when the only apparent solution is the outright destruction of an entire species? That's one issue that had never come up in the ethics classes at the space academy. It's also an issue I'd never considered when I signed up to become a combat pilot.

When I was young, my heroes were the men and women who fought in space. It looked exciting, with the opportunity to see things that most people only saw in holo-vids. Fighter pilots were the cream of the crop, the best and brightest, most fearless and brave. At least that's what I thought.

I'd only been in space for 18 months, but I felt like a 20-year veteran. At this point I realized that the steely look I saw in the faces of pilots when I was young actually revealed a numbness born of living with death and destruction. It was something you could never get used to. The thrill I felt the first time I blasted a Kilrathi ship had been replaced by the realization that I was also destroying a life. An evil life, perhaps, but a life nevertheless. I wondered if Kilrathi pilots felt the same way.

Looking back at my feelings at the time, I realize I was exhausted by the intensity of the missions in Kilrathi space. Becoming a fighter pilot hadn't matched my expectations, but I knew the job we were doing was one that had to be done. You really can't worry about the destruction of a species that's intent on eliminating you.

I also realized that watching Maniac try to deal with his personal demons was having an effect. Whenever I thought of what he was going through, I understood that it could just as easily be me. That was scary.

I headed for the bar.

The Firekka Missions

It was really kind of a fluke that led the Confederation to the discovery of the Firekkans. Long-range scans hadn't revealed any mineral resources in the isolated system and it was far from any established trade routes, so it wasn't on the priority list for scientific exploration.

The Firekkans might have remained isolated if there hadn't been a war between the Confederation and the Kilrathi. Several years ago, our Marines were searching for a location to practice massive splashdown landings and assault maneuvers. Since they were employing some new technology, they needed a safe location that the Kilrathi would not be monitoring or patrolling. They were also looking for large areas of water in a low-gravity environment. They thought the Firekkan system fit the bill.

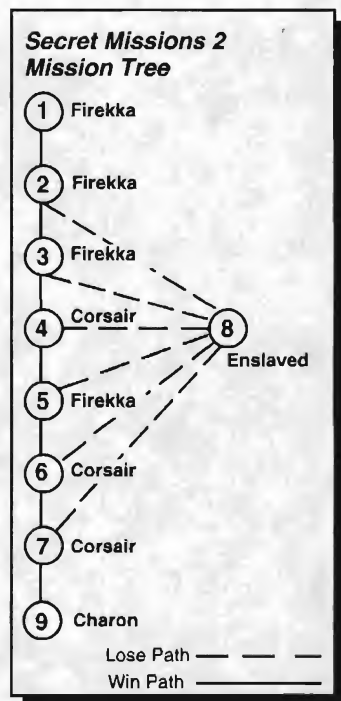
Before the maneuvers began, our forces sent an exploratory patrol to the system. That's when we found this friendly, intelligent, and highly evolved sentient race of aliens. It ruined the Marines immediate plans for training exercises, but it led to a burgeoning relationship between leaders of the Terran Confederation and the Firekkans.

Impressed by the Firekkan culture, our Diplomatic Corps started negotiations designed to expand the Confederation. It had taken almost three years, but we had reached the point where an official treaty between the two groups was imminent. That's why the *Tiger's Claw* had jumped to the Antares Sector.

After the hard-fought confrontations in Vega and Goddard, we were relieved to be spending some time as the Honor Guard for the Confederation Diplomatic Corps. It looked like our pilots, technicians, communications operators, and mechanics would finally receive some shore leave during the treaty conference. A little escort duty, far from the Kilrathi battle fleets, would be a welcome respite.

The main topic of conversation on the carrier came from those who had already taken their shore leave. Everyone was impressed by the physical beauty of the planet, the sensitivity and intelligence of its inhabitants, the unusual technology found in its cities, and the diverse nature of its culture. For those of us who hadn't yet been granted leave, it served to whet our appetites even more.

The Firekka Treaty — Finding an Ally



Firekka System
Mission 1
Alpha Wing

The treaty signing was only days away when Terran Intelligence reported the sighting of a Kilrathi convoy moving through a nearby star system. Concerned about a disruption of the activities, Halcyon ordered watch patrols while we began escorting our diplomats to jump points to the planet's surface.

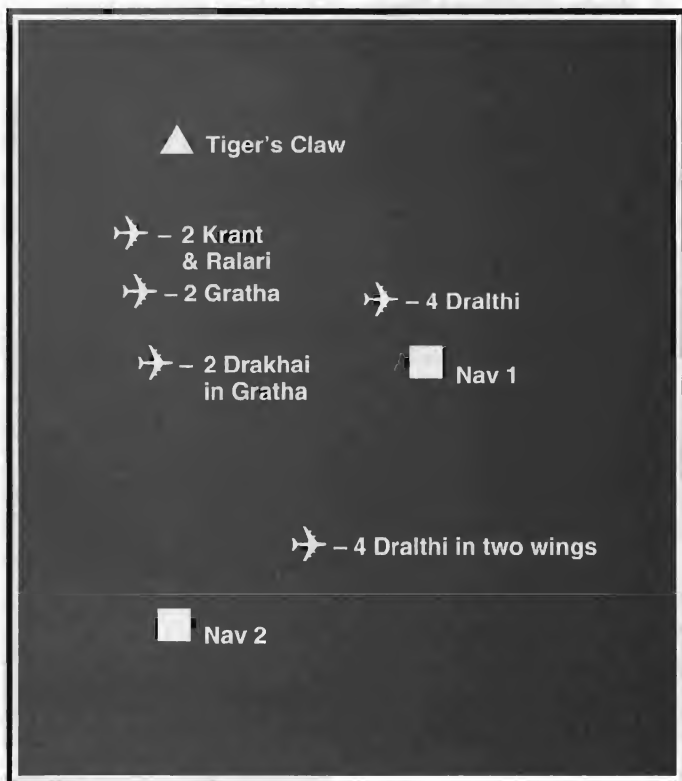
Mission Profile:

Via Nav 1, escort the *TCS Perez de Cueller* to its jump point at Nav 2. On the return leg, patrol and engage enemy targets. If the convoy is sighted, immediately return to the carrier and report.

Mission Chronology:

1. Four Dralthi attacked 9116 km from Nav 1.
2. Two wings of two Dralthi each attacked 16,369 kilometers from Nav 2. One wing was ahead, the other above.
3. *TCS Perez de Cueller* jumped to Firekka at Nav 2.
4. Two Drakhai flying Gratha attacked our wing just before we reached the carrier. They were advance scouts for two Gratha and two Krant escorting a Ralari.

Wingman: Iceman
Ship: Hornet



Post-Mission Analysis:

With great success, we taunted the enemy and attacked the weak sides of the eight Dralthi who attacked before the Exeter jumped at Nav 2. We were unprepared for the Drakhai (Kilrathi Imperial Guards).

Flying Gratha, these guys were almost as good as the Kilrathi aces we'd faced in Vega. Their tactics in combat didn't conform to our expectations. They didn't just turn and run after making a fishhook to try and get on your tail. They couldn't match our speed, though, and we hit them with lasers followed by Javelins. Against the other pilots, we stuck with slides to both sides and rapid laser volleys.

Firekka System Mission 2 Kappa Wing

The appearance of the Imperial Guard had us baffled. Good grief, this was the Firekka System! We didn't think the Kilrathi had tracked the *Claw* here, and we couldn't find any strategic element in the war that would lead our enemy here. We were still searching for the convoy.

Mission Profile:

Fly a two-point patrol in search of the Kilrathi convoy. Attack individual wings, but if the convoy is found, just target the ships to engage the automatic cameras and return to the carrier.

Mission Chronology:

1. Two Drakhai in Dralhti and two more Dralhti attacked 42,406 kilometers from Nav 1. Two ran midway through the battle.
2. Two wings of Krant attacked 14,986 kilometers from Nav 1.
3. Convoy sighted 20,149 kilometers from Nav 2. Nine Drakhai and three Fralhti targeted.
4. Minefield encountered 33,800 kilometers from the carrier.

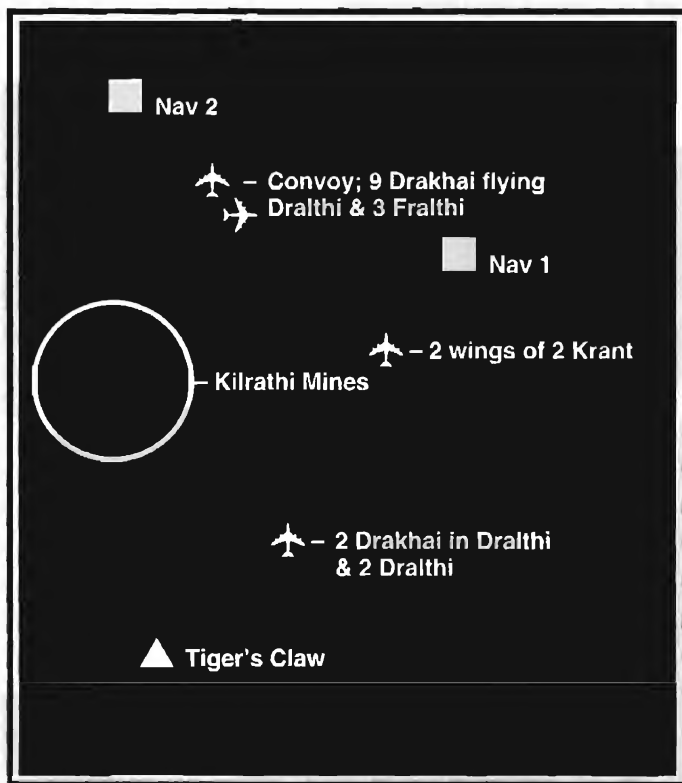
Wingman: Iceman
Ship: Hornet

Post-Mission Analysis:

We didn't realize, when the first wing of Drakhai attacked near Nav 2, that they were an advance fighter wing escorting the convoy. We engaged the enemy fighters until we sighted the Fralhti, then simply concentrated on targeting each enemy to start the automatic cameras.

With nine fighters protecting the convoy, we constantly used our afterburners, followed by hard turns to the left and right to avoid enemy fire. Once we'd targeted every ship, I ordered Iceman to form on my wing, kept the afterburners pinned to maximum, and ran away.

We ran into mines, but skirted the field by keeping our nose to the far right of the nav cursor on the final leg.



Firekka System Mission 3 Epsilon Wing

Incredibly, we had discovered that a stray convoy was not our biggest concern. An entire battle fleet was headed our way. It was smaller than the one we'd battled in Goddard, but we still didn't know why they were in this system.

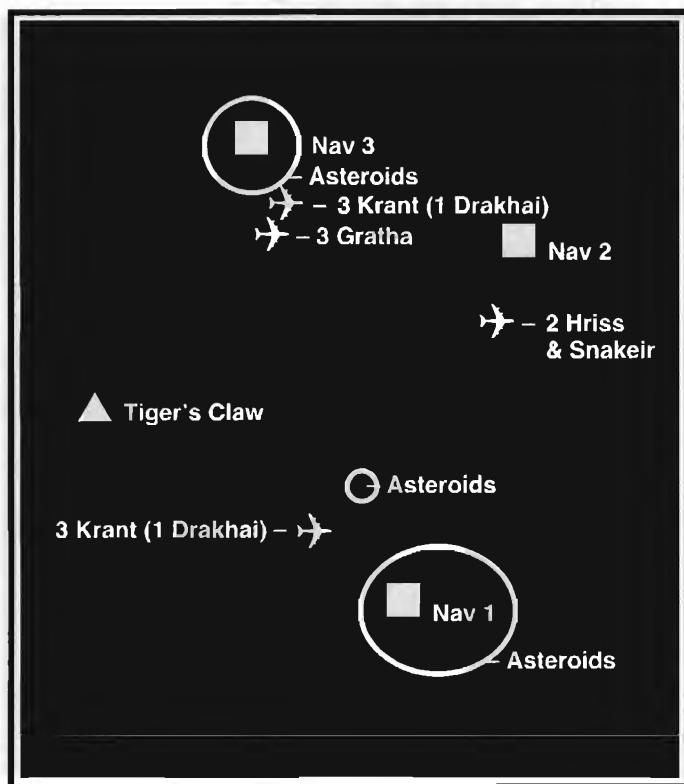
Mission Profile:

Epsilon Wing — Knight and I in Rapiers — were to fly a three-point sweep patrol. The colonel told us to engage the enemy but to run from overwhelming opposition.

Mission Chronology:

1. Three Krant, one piloted by a Drakhai, attacked 20,115 kilometers from Nav 1.
2. Asteroid field surrounded Nav 1.
3. Three Hhriss, experimental fighters, and a Snakeir, a large capital ship, were discovered 19,325 kilometers from Nav 2.
4. Three Gratha attacked in the asteroids 15,098 kilometers from Nav 3. Three Krant, one piloted by a Drakhai, joined the attack.

Wingman: Knight
Ship: Rapier



Post-Mission Analysis:

Since it was the first time we'd encountered them, the Hhriss caused the most problems on this mission. The Hhriss, like the Jalthi, carried neutron guns. They also employed mass drivers and were faster than any other medium or heavy fighter in the fleet, making them formidable opponents.

Without a laser, the Hhriss were more effective in close than at long range. Since we were flying Rapiers, we tried to stay at long range, using our 70-KPS speed advantage, and hit the enemy with lasers to weaken their heavy 15-cm fore and 18-cm rear shields. Once the shields were down, we could gain position with our speed, and switch to full guns and missiles for the kill.

We didn't know what was going on. Confederation High Command reported that all Kilrathi fleets were headed toward the Firekka System. Reinforcement were being sent, but we would begin evacuation of our diplomats from the system immediately.

Firekka System Mission 4 Epsilon Wing

Mission Profile:

Meeting at the rendezvous point at Nav 1, we were ordered to escort the *TCS U Thant* and *TCS Strygwie* to their respective jump points at Nav 2 and Nav 3.

Mission Chronology:

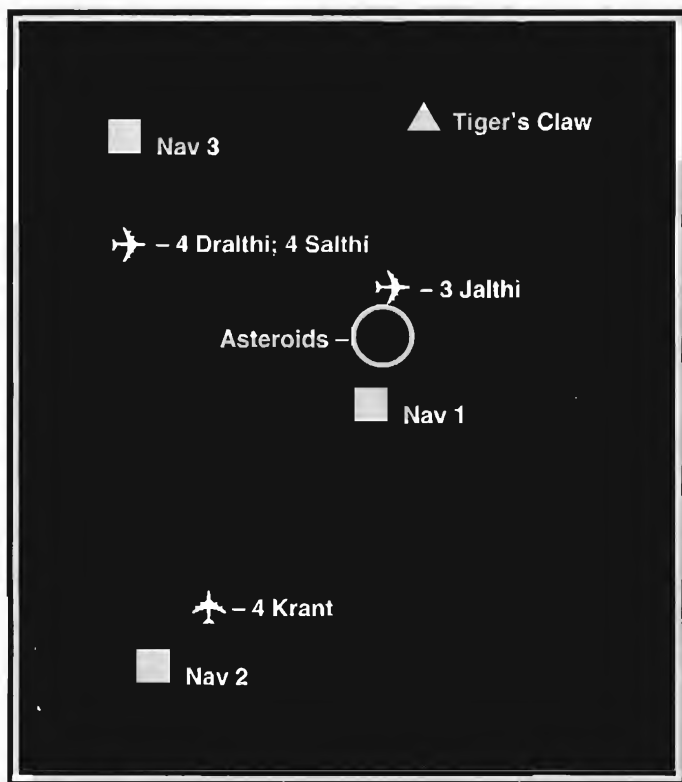
1. Three Jalthi attacked at the edge of an asteroid field 12,284 kilometers from Nav 1.
2. Two Krant ahead and two Krant above attacked the Exeters when we were 11,000 kilometers from Nav 2.
3. TCS *U Thant* jumped 6200 kilometers from Nav 2.
4. Four Dralhti and four Salthi attacked the TCS *Strygvi* 14,279 km from Nav 3.
5. TCS *Strygvi* jumped at Nav 3.

Wingman: Knight
Ship: Rapier

Post-Mission Analysis:

The greatest threats to our Exeters were the four Krant who attacked just before we reached Nav 2. The first wing hit from dead ahead and we used our afterburner slide to the right with full guns to hit them hard on the first pass. We used our speed and afterburners to race into a rear position, and cut loose with neutrons, and Spiculums to take them out.

Taunting the second two Krant halved the force that attacked the Exeters, but we both targeted the enemy fighter that continued the assault. In such crowded quarters, we didn't want to use our friend-or-foe missiles. We made the enemy break attack by firing Darts and then hit their heavy armor with full guns from the side.



Firekka System
Mission 5
Omicron Wing

At first, I wasn't sure I'd understood Halcyon's briefing. High Command had intercepted a vid-link from Captain Ralgha, a Kilrathi commander, asking for asylum on the carrier. The officer was willing to bring in a Fralthi and its 20-fighter escort. Pilots from the *TCS Austin* had already rendezvoused with the capital ship and placed a human crew at the helm.

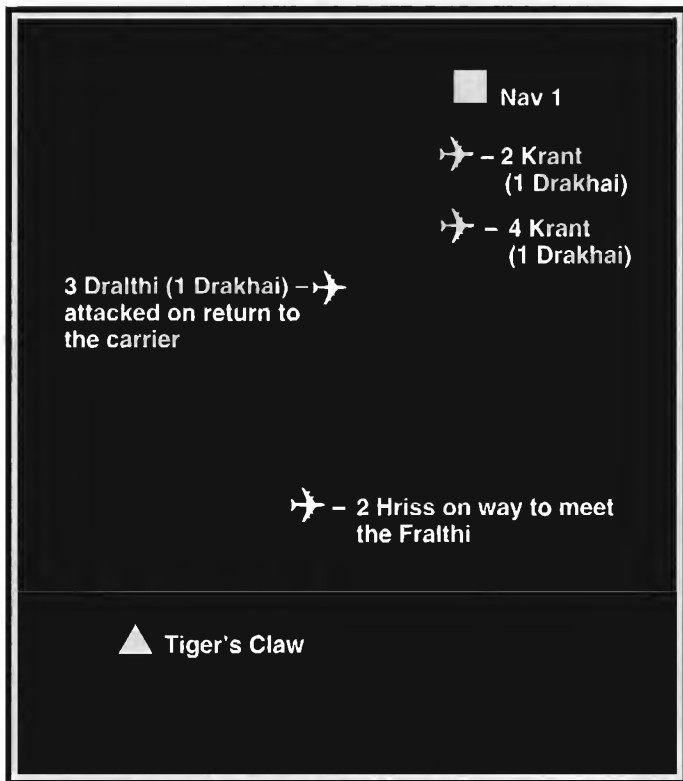
Mission Profile:

Spirit and I, flying Raptors, were ordered to meet the enemy fleet at Nav 1 and escort them back to the carrier.

Mission Chronology:

1. Two Hhriss attacked our wing 107,109 km from Nav 1.
2. Four Krant, one piloted by Drakhai, attacked our wing 8619 kilometers from Nav 1. During the fight, we sighted the Fralthi.
3. Two Krant, one a Drakhai pilot, attacked the Fralthi at Nav 1.
4. Rendezvous with Fralthi. Set speed to 90 KPS.
5. Three Dralhti, one piloted by Drakhai, attacked the Fralthi 88,158 kilometers from the carrier.

Wingman: Spirit
Ship: Raptor



Post-Mission Analysis:

Our speed allowed us to gain position on the Hhriss and take them out with three shots each from our full guns at close range. The Krant who attacked as we met the Fralthi were much tougher.

It's always a good idea to stay with one target until it's destroyed, but when you're guarding a capital ship that tactic can backfire. We kept targeting whatever fighter was attacking the huge ship. It took longer to destroy the enemy, but it ensured that we could protect the prized Fralthi. I kept telling Spirit to attack my target to make sure she followed my lead. Full guns, image recognition, and heat-seeking missiles were our most valuable weapons.

Firekka System Mission 6 Beta Wing

Two more enemy battle fleets were on the way to Firekka. After receiving a vid-link from Kilrathi Prince Thrakhath, we had some understanding of the situation. His message indicated that we were trespassing on the holy ground of Lord Sivar, the Kilrathi war god. He gave us one planetary rotation to leave. Command ordered us to retreat to a nearby star system, hoping the Kilrathi would think we had abandoned the area.

Mission Profile:

Beta Wing — Spirit and I in Raptors — was ordered to escort a Drayman, part of the evacuation fleet, to its jump point at Nav 3. Other wings would help clear a path for the carrier's move to the Corsair System.

Mission Chronology:

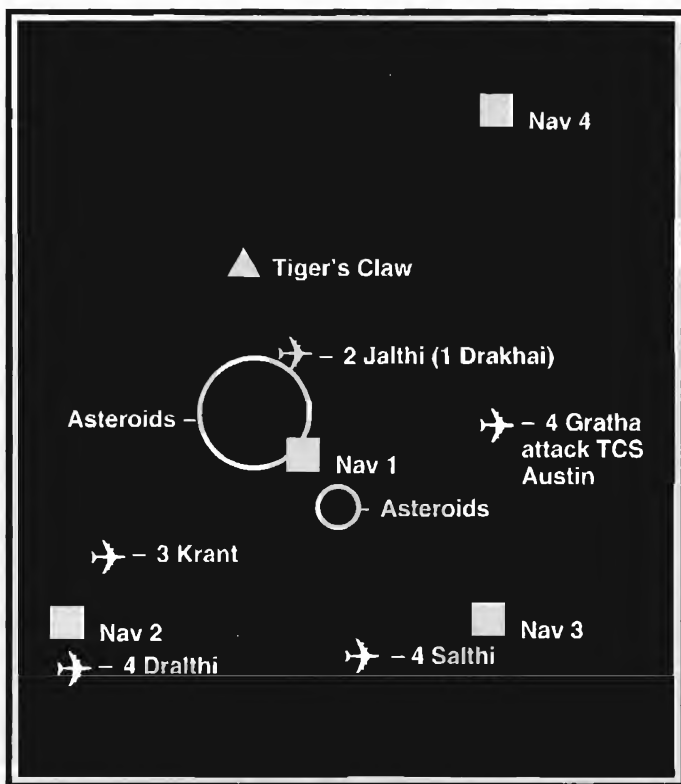
1. Two Jalathi, one piloted by a Drakhai, attacked in the asteroid field 19,819 kilometers from Nav 1.
2. Three Krant attacked 19,701 kilometers from Nav 2.
3. Four Dralathi attacked the Drayman at Nav 2.
4. Two wings of Salathi attacked 5670 kilometers from Nav 3.
5. Four Gratha attacked the TCS *Austin* 67,713 kilometers from Nav 4.

Wingman: Spirit
Ship: Raptor

Post-Mission Analysis:

After we picked off the first Jalathi with full guns, the Drakhai pilot retreated. Taunts, full guns, and afterburner slides kept us and the Drayman alive against the three Krant, four Salathi, and four Dralathi who attacked. The big surprise came when we ran into the TCS *Austin*.

We hit full afterburners as soon as we noticed the large ship was under attack, and began taunting each enemy ship. We used our neutrons to hit their shields, then used our Javelins and Spiculums to pierce their armor.



Corsair System Mission 1 Beta Wing

This mission was going to be strange. We would fly the Dralhti that we'd captured when Captain Ralgha came in to seek asylum. The ships had been refitted with Terran weapons and targeting systems, but our technicians hadn't had time to install ejection systems.

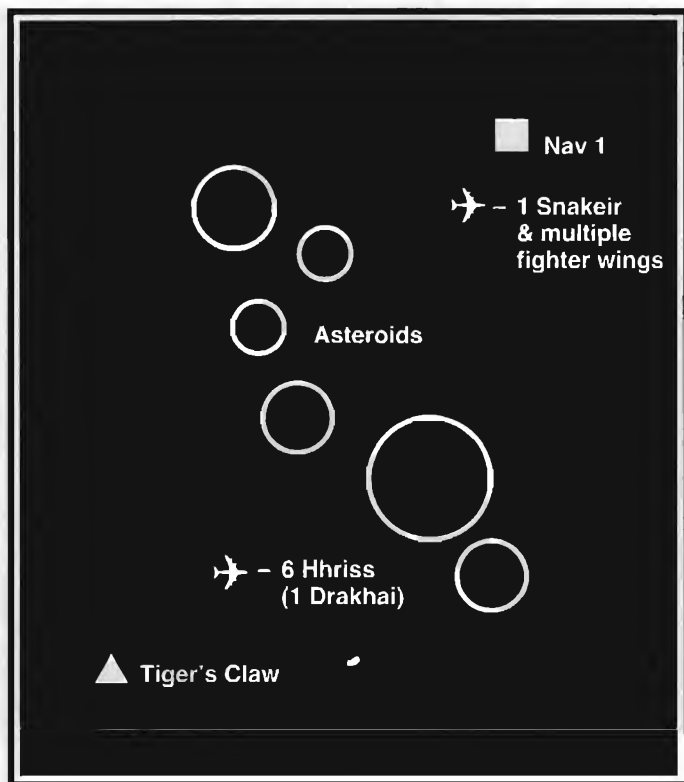
Mission Profile:

I would fly with Jazz, one of the pilots we'd borrowed from the TCS *Austin*, to a single navigation point. We were ordered to infiltrate behind enemy lines and to obtain information. We were not to engage the enemy unless fired upon first.

Mission Chronology:

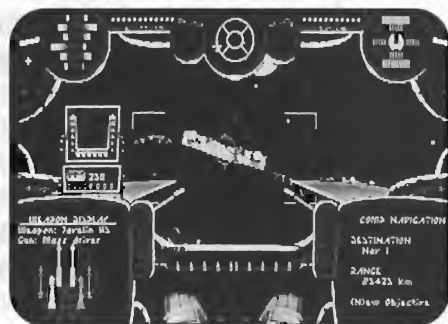
1. Six Hhriss, one piloted by a Drakhai, sighted 104,263 kilometers from Nav 1.
2. One Snakeir, with a multiple wing escort, sighted when we were 20,000 kilometers from Nav 1.

Wingman: Jazz
Ship: Dralhti



Post-Mission Analysis:

Since our comm computers had been programmed to simulate the conversation of a Kilrathi pilot, I told Jazz to maintain radio silence for the mission. We never fired a shot, just hit the afterburners and blew right by any enemy ships and fighter wings we encountered. It was one of the easiest missions I ever flew. It was also one of the scariest.



The view from a Dralhti cockpit is somewhat obscured by its protruding wings.

We finally understood the situation. We had ended up right in the middle of a military-religious ceremony that the Kilrathi held every year. The fact that it took place in the Firekka system was just plain dumb bad luck on our part. Captain Ralgha had come up with a plan to disrupt the ceremony by launching an assault on the Kilrathi war priestesses on the planet's surface.

Mission Profile:

Flying Dralthi, Jazz and I would again infiltrate behind enemy lines. This time our mission was to intercept communications between the Kilrathi in space and those who had landed on Firekka. Once again, we weren't to engage the enemy unless they discovered our deception.

Mission Chronology:

1. Three Drakhai in Jalthi sighted 90,000 kilometers from Nav 1.
2. Three Dralthi and two Rapiers attacked 16,000 km from Nav 1.
3. Two Jalthi attacked 8000 kilometers from Nav 2.
4. Two Rapiers attacked 5000 kilometers from Nav 2.

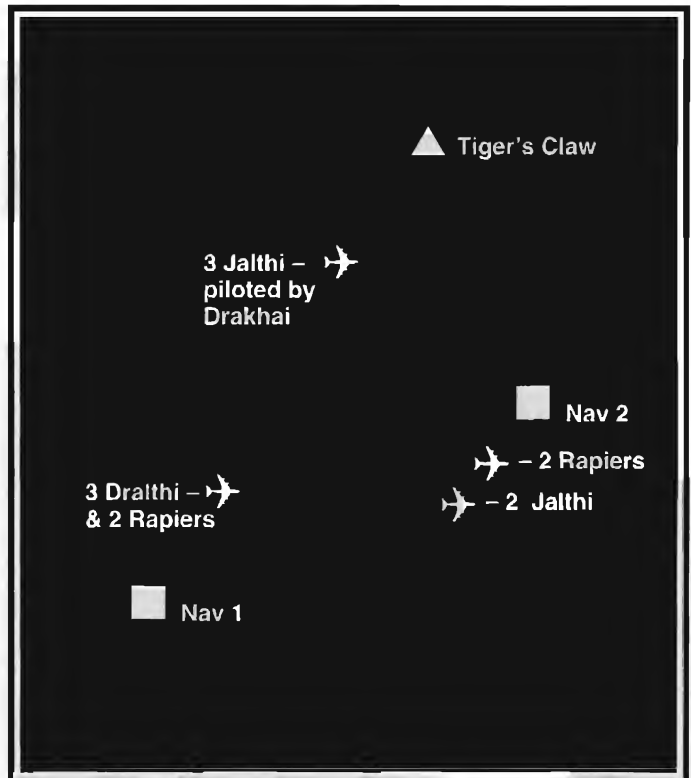
Corsair System Mission 2 Mu Wing

Wingman: Jazz
Ship: Dralthi

Post-Mission Analysis:

Maintaining radio silence, we blew by the three Drakhai pilots. They had no idea we weren't Kilrathi.

The Dralthi and Rapiers somehow knew we were impostors and attacked our position. At first I was taken aback. Here I was, sitting in a Dralthi and dogfighting with a Rapier. It's a good thing we carried Terran weapons in the captured Dralthi and that the enemy didn't know it. The Rapiers held a speed advantage, but they came in straight and fast, thinking that we were only using lasers. Our mass drivers surprised them and blunted the assault, and we quickly swung around and hit them from the rear with the Javelins and Darts.



Near Firekka
Mission 1
Psi Wing

Since elite Marine forces were going to launch the ground assault against the Kilrathi war priestesses, the carrier's fighter wings were going to clear jump points for Drayman troop transports. I was assigned to fly with another pilot from the *TCS Austin*, Lt. Etienne Montclair, also known as Domsday.

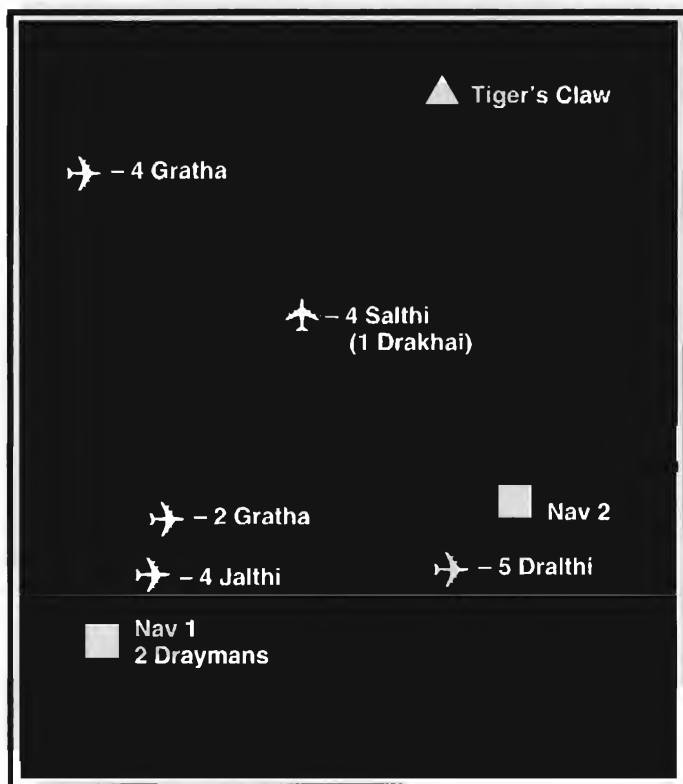
Mission Profile:

Colonel Halcyon ordered us to rendezvous with two Draymans and escort them to their jump points near Nav 1 and Nav 2. We were to protect them until they completed their jumps to Firekka's atmosphere.

Mission Chronology:

1. Four Salthi, one piloted by a Drakhai, attacked the transports when we were 44,000 kilometers from Nav 1.
2. Two Gratha attacked when 13,370 kilometers from Nav 1. One Drayman jumped during the dogfight.
3. Four Jalthi attacked Drayman 6015 kilometers from Nav 1.
4. Five Dralthi, in two wings, attacked 15,000 kilometers from Nav 2.

Wingman: Domsday
Ship: Hornet



Post-Mission Analysis:

Speed was the only thing we had on our side in the Hornets, so we took full advantage of it. We kicked the afterburners when the four Salthi turned away, and hit them with lasers from the rear. Afterburner slides took care of the Gratha.

The four Jalthi who attacked right after the first Drayman jumped were the toughest. Using taunts to draw them away from the Drayman, we launched Darts to force them to break their initial attack and then followed. It seemed like we punched afterburners every few seconds to avoid guns and missiles, then burned again to follow. Two went down with our Javelins and two fell to the lasers.

We had received word that one of our Draymans, the *TCS General Powell*, had never arrived at its rendezvous point. Soon after, an emergency communication indicated that it had been overrun by the Kilrathi, but that officers were trying to retake the ship.

Mission Profile:

Flying Dralhti, Doomsday and I were ordered to assist the Drayman and escort her back to the carrier.

Mission Chronology:

1. Four Drakhai flying Krant appeared when we were 72,916 km from Nav 1. They didn't attack our wing of Dralhti.
2. Four Drakhai in Hhriss were found attacking the Drayman at Nav 1. During our dogfight, the Drayman jumped to Nav 2.
3. Three Jalhti were discovered heading for the Drayman when we were 19,810 km from Nav 2.
4. Three Krant attacked as we brought the Drayman to the carrier.

Near Firekka Mission 2 Theta Wing

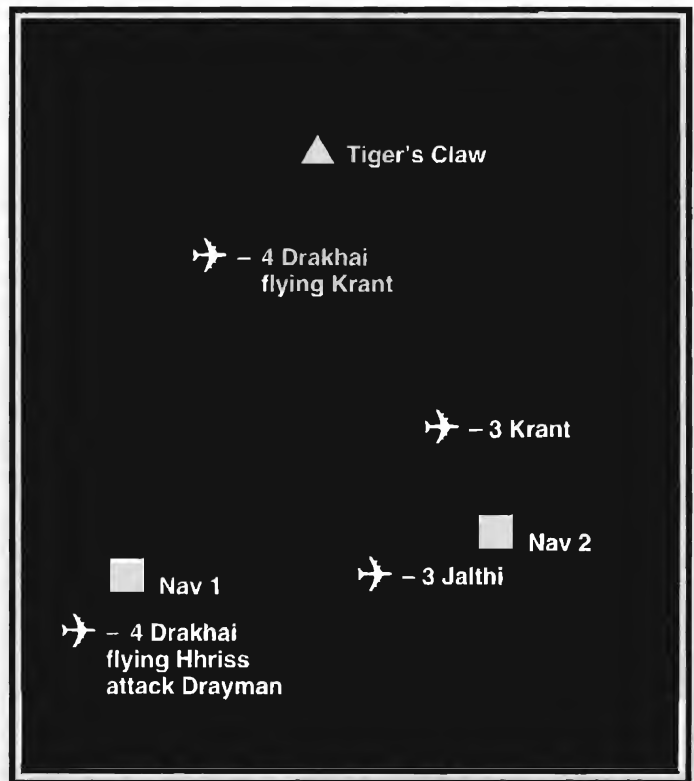
Wingman: Doomsday
Ship: Dralhti

Post-Mission Analysis:

We kept radio silence and sneaked right by the four Krant who appeared soon after we left the carrier.

Against the Drakhai pilots in the Hhriss, we were lucky that the Drayman jumped during the dogfight. I'm not sure we could have saved her from the heavy enemy fighters. Without worrying about the transport, though, we fought defensively, using constant slides to avoid their fire, and using our maneuverability to gain position and hit quickly with our lasers.

We expended our missiles and voices against the Jalhti. We used our speed advantage after taunting the pilots to keep them away from the Drayman. I ordered Doomsday to attack my target to take out the first Jalhti, then switched to break and attack.



Corsair System
Mission 1
Sigma Wing

The Marines had completed a successful splashdown on Firekka and were preparing an assault against the Kilrathi war priestesses. Several fighters were returning to the carrier.

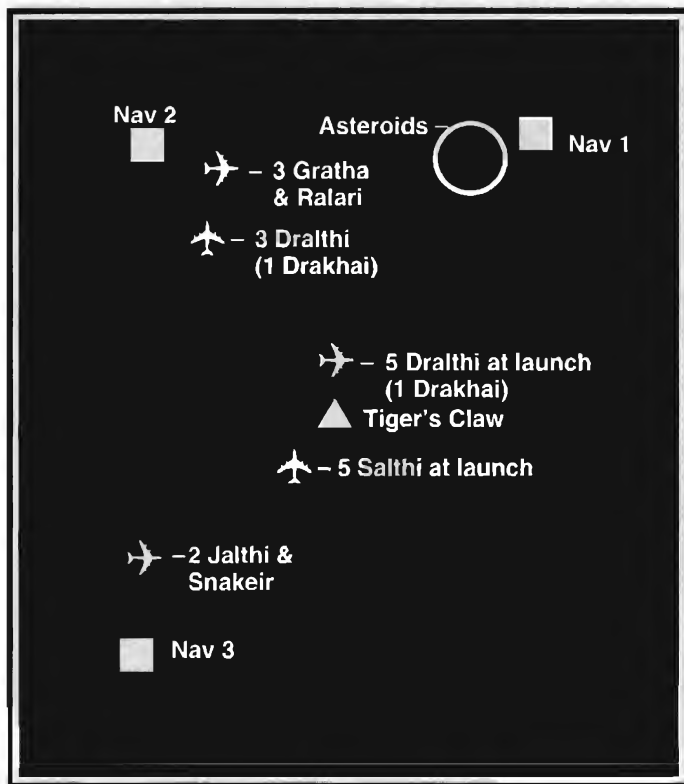
Mission Profile:

Colonel Halcyon ordered Hunter and me, flying Raptors, to clear the area surrounding the carrier to create a path for the returning fighters. Once completed, we were to fly a three-point patrol.

Mission Chronology:

1. Five Dralhti, one piloted by a Drakhai, and five Salthi attacked the carrier as soon as we launched.
2. Asteroid field encountered 9000 kilometers from Nav 1.
3. Three Gratha and a Ralari were engaged 16,000 km from Nav 2. Three Dralhti, one piloted by a Drakhai, joined the battle.
4. Two Jalhti escorting a Snakeir were engaged 17,203 kilometers from Nav 3.

Wingman: Hunter
Ship: Raptor



Post-Mission Analysis:

This was a mission in which the impressive arsenal of the Raptor saved the day. We cleared the carrier only using full guns. It only took a couple shots from the combined neutrons and mass drivers to destroy the light and medium fighters. With our heavy armor, we waded right into the battle.

We were more cautious against the Gratha escort wing, sliding, looping, and turning to evade their fire, then hitting with neutrons to reduce their shields. A Porcupine took out a trailing fighter, while our Spiculums destroyed the other two.

Full guns with a circling attack from the rear destroyed the Ralari, while I used my heat-seekers on the first two passes against the Snakeir. Both Raptors followed with full guns.

The Marines were in position for the attack and we were going to support their mission by intercepting Kilrathi troop ships as they moved toward Firekka.

Corsair System Mission 2 Mu Wing

Mission Profile:

Hunter and I were ordered to fly a two-point search-and-destroy mission. Our intended targets were Kilrathi troop transports.

Mission Chronology:

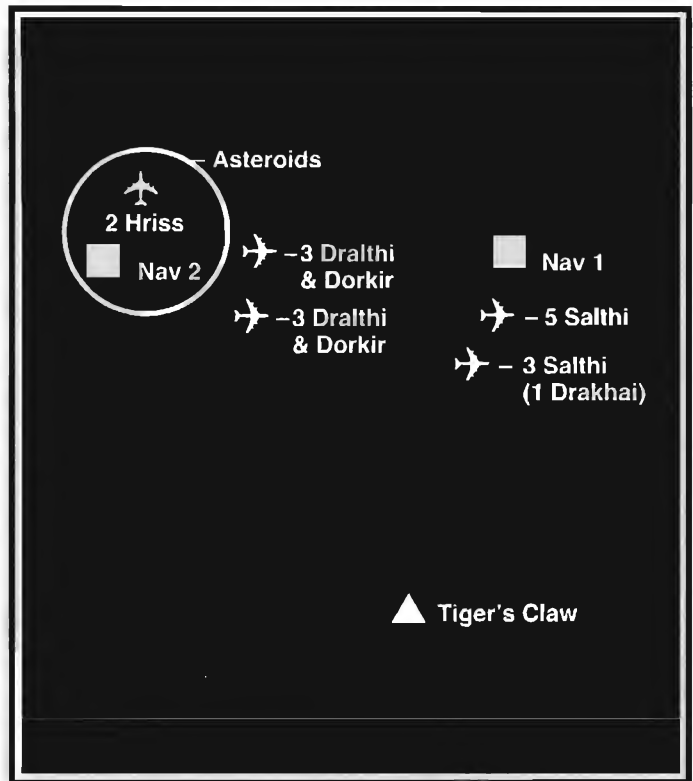
1. Three Salthi, one piloted by Drakhai, attacked 15,729 km from Nav 1. Five Salthi attacked 3500 kilometers from the nav point.
2. Two wings of Dralhti found escorting two Dorkir transports 86,616 kilometers from Nav 2.
3. Asteroid field discovered 16,755 kilometers from Nav 2.
4. Two Hhriss attacked in the asteroids when we were 3000 kilometers from Nav 2.

Post-Mission Analysis:

When we found the Dorkir and their escorts, we knew we had to act fast to prevent them from jumping before we had the chance to destroy them. I targeted the group on the right and sent Hunter to attack my target. Then I turned left to attack the second group on my own.

With the Raptors' heavy armor, we could take the Dralhti head-on and didn't have to evade their first rush. It gave us the advantage of inflicting some damage right away with our full guns. We followed with our heat-seekers, image recognition, and Pilum missiles to get the job done fast, then turned on the Dorkir. We attacked each Dorkir together, hitting the afterburners to get close fast and using our full guns from the rear in an aggressive attack at close range.

Wingman: Hunter
Ship: Raptor



Corsair System
Mission 3
Omicron Wing

After the Marines' victory on Firekka, the Kilrathi were making every effort to prevent our Confederation troop transports from leaving and making their way to the protection of the carrier. Since the ceremony had been disrupted, we were sure the Kilrathi prince would fear mutiny if he ordered a general attack.

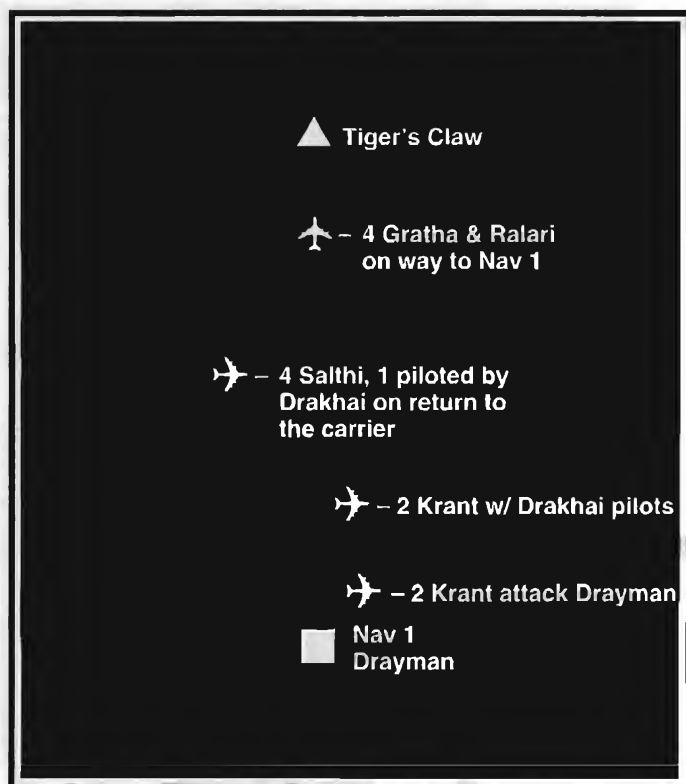
Mission Profile:

Our mission was pretty straightforward. Halcyon ordered us to make our way to Nav 1 flying Dralthi, meet a troop transport, and escort the ship back to the *Tiger's Claw*.

Mission Chronology:

1. Four Gratha and a Ralari discovered 60,507 km from Nav 1.
2. Two Drakhai in Krant attacked us 19,984 km from Nav 1.
3. Two Krant found attacking our Drayman at Nav 1.
4. Four Salthi, one piloted by a Drakhai, attacked our Drayman 60,181 km from the carrier.

Wingman: Angel
Ship: Dralthi



Post-Mission Analysis:

The key to our escort mission was speed. When the first two Drakhai attacked us, flying Krant, we had a slight advantage in speed and heavier guns — our mass driver against their laser cannon. We tried to stay close and hit fast with the Gatling. It's a good thing the Krant went down, because the Drayman was in trouble.

We kept the afterburners pinned as we rushed in to protect the transport. Immediate taunts lured one Krant away, but the other continued the assault. I ordered Angel to attack my target and we went after the enemy who was hammering the Drayman. I fired a dumb-fire at long range to disrupt the attacking fighter's tactics, then we went in with the mass drivers until they turned, then followed with a Javelin up the engine tubes.

The Kilrathi were in trouble, but we knew they would attempt to inflict as much damage as possible before they left, to retaliate for the disruption of their military/religious ceremony. Millions of Firekkan lives were at stake.

Corsair System Mission 4 Omega Wing

Mission Profile:

Our mission was to destroy any enemy ships we encountered on a three-point patrol. Angel and I flew Rapiers.

Mission Chronology:

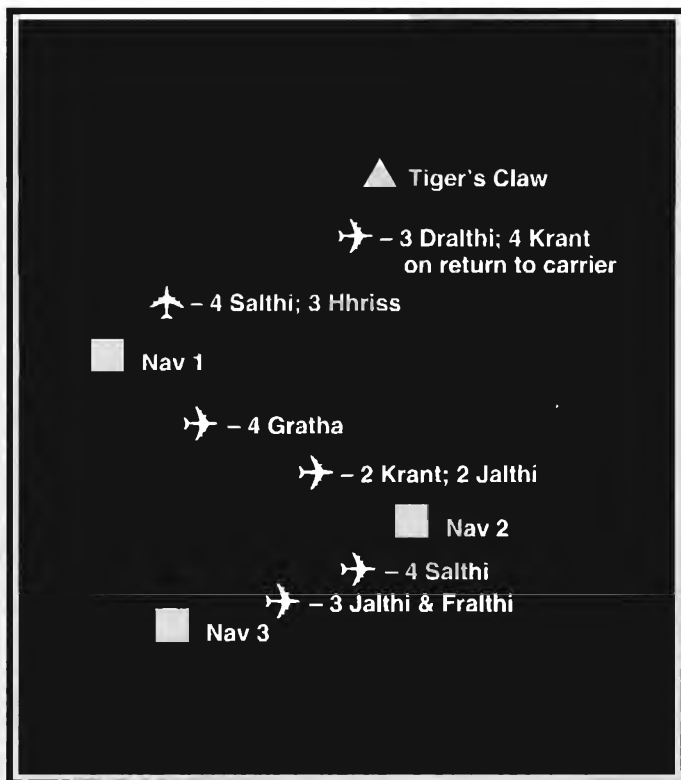
1. Four Drakhai in Salthi attacked our wing when we were 10,104 kilometers from Nav 1. Three Hhriss joined the attack.
2. Two wings of Gratha, with two ships in each, attacked our wing 77,025 kilometers from Nav 2.
3. Two Krant and two Jalthi attacked our wing 18,107 kilometers from Nav 2.
4. Four Salthi engaged 71,055 kilometers from Nav 3.
5. Three Jalthi escorted a Fralthi 16,477 kilometers from Nav 3.
6. Three Dralthi, followed by four Krant, attacked our wing 8366 kilometers from the carrier.

Wingman: Angel
Ship: Rapier

Post-Mission Analysis:

I can't single out a specific engagement that was a turning point in our mission. When you engage 29 different enemy fighters, you pull out all the stops and use every tactic.

Flying Rapiers with a top speed of 450 KPS helped. We were faster than any ship we had to fight. Knowing we would encounter a lot of enemy pilots, we kept our heads and concentrated on avoiding damage in every dogfight. We always evaded the first wave of fighters, then turned to follow and attack from the rear. We kept sliding with afterburners and hard turns, used the lasers at long range, and our full guns and missiles in close.



Border Zone
Mission 1
Iota Wing

The Kilrathi were right on our tails as we headed back toward Vega Sector, but a strike fleet in our path was a greater concern. We would go after the strike fleet first.

Mission Profile:

Colonel Halcyon ordered us to fly a three-point patrol in front of the carrier and eliminate the enemy strike fleet. Other wings would fly similar patrols. Somehow, Maniac had been placed on active duty and would fly on my wing.

Mission Chronology:

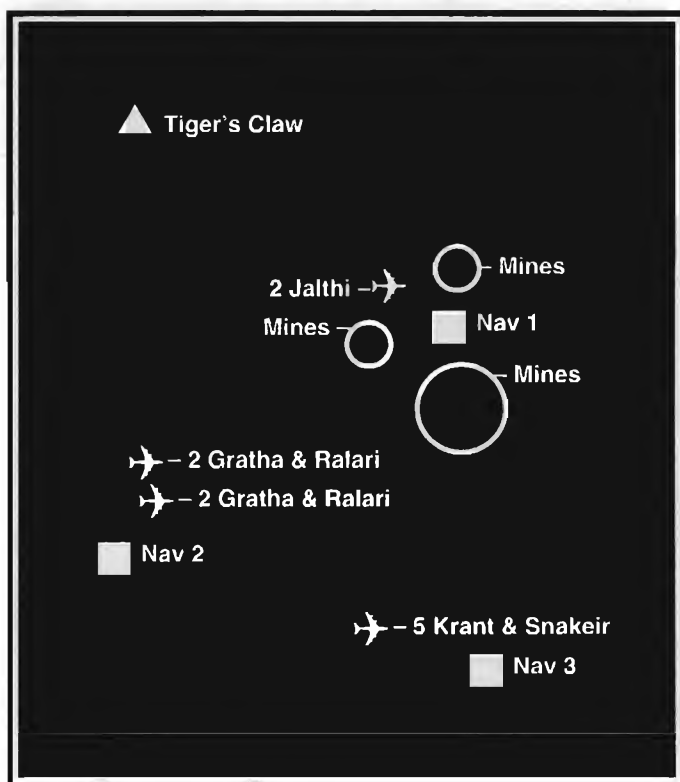
1. Two Jalathi attacked 14,852 kilometers from Nav 1.
2. Two strike forces, each containing two Gratha and a Ralari, discovered about 13,900 kilometers from Nav 2.
3. Five Krant protecting a Snakeir 13,525 kilometers from Nav 3.
4. Kilrathi minefield found 54,000 kilometers from the carrier.

Wingman: Maniac
Ship: Raptor

Post-Mission Analysis:

Maniac was out of it. He kept saying he was at ramming speed, so I had to act as if I was flying on his wing and keep protecting him from harm. When we hit the first two Gratha, we each went after a different fighter. It gave us the ability to ignore our "six," the vulnerable slot directly behind our fighters. The second Ralari's fighters attacked us before we had completed our attack on the first capital ship. We finished off all the fighters with our full guns and saved missiles for the two destroyers.

Against the Krant, I followed Maniac as he went after a single ship. I kept the neutrons blazing to help even out the odds. Then, under break and attack, we split our guns among the four fighters. We stayed with a target until it was destroyed, and dropped Porcupines on ships to our rear.



In a last ditch effort, the Kilrathi were launching an assault on the *Tiger's Claw*. It didn't take a genius to figure out what our missions would be.

Border Zone Mission 2 Upsilon Wing

Mission Profile:

Protect the carrier from all incoming fighter wings.

Mission Chronology:

1. Three Dralthi attacked at launch, quickly followed by three more Dralthi, five Salthi, and three Hhriss, one piloted by a Drakhai.

Post-Mission Analysis:

Maniac was a real basket case. I didn't expect anything different after the last mission. As soon as we saw an enemy, I would hear him say "Ramming speed." Whenever I tried to order him to do something, his reply was simply "What?" It didn't make things any easier.

Wingman: Maniac
Ship: Rapier

Since the survival of the carrier was vital, I decided before the mission that I would just ignore Maniac's actions. He was on his own this time.

We were fortunate that the first 11 fighters were just Dralthi and Salthi. In the heavy Raptor, we could trade a few punches with them without losing any major systems. It allowed us to hit them hard with full guns on their first pass, then let our shields regenerate before pursuing them with afterburners from the rear.

The Hhriss piloted by the Drakhai was the toughest. It would have helped if I could have told Maniac to attack my target, but he wasn't listening. I finally took the Hhriss down with a perfect afterburner slide, followed by full guns and an IR missile.



The Firekka Triumph

We'd saved our feathered friends from the Kilrathi, but we'd paid a heavy price. We had all lost friends.

Bossman was dead, killed by the Imperial Guard while flying on Angel's wing. Spirit's fiancé had been captured by the enemy. Hunter had lost a brother, a Marine who died on the assault on the war priestesses. Maniac was back in sick bay, and no one expected him to ever return to active duty again. Angel had left the *Tiger's Claw* to command the fighter wings on the *TCS Austin*.

I really didn't know where I stood. Colonel Halcyon had said he wanted me to command the wings on the carrier after he left to work at Tactical Command. He hadn't left yet, and I hadn't heard anything since the fighting had stopped.

One of the most difficult moments during the campaign on Firekka came up during a conversation with Iceman. I could never track down the source of the information, but he mentioned the possibility that we had traitors aboard the carrier, and he didn't mean the Kilrathi who had been granted asylum by the Confederation.

I couldn't even fathom the possibility. How could any Terrans align themselves with the alien race that had destroyed a quarter-million lives on Goddard Colony? History has shown only three reasons that people become traitors: sex, money, and idealism. I couldn't imagine the first or last as a reason, so money must have been the motive. It made me wonder about the future.

We reached the Vega System and settled in for what Halcyon called "routine patrol duty." It would prove to be anything but routine, and would create drastic changes in my career in the TCSN.

Vengeance of the Kilrathi

After cruising around Vega for a couple of weeks, where the maintenance and tech crews had been kept busy with repairs, the *Tiger's Claw* had been ordered to Enigma Sector for a move on K'tithrak Mang. Halcyon explained that we would be mounting an all-out assault on the enemy's headquarters. "Get some rest in the next two days, pilots," he barked. "We'll be scrambling every wing on board as soon as we complete our leap."

That night, I was talking shop with Shotgun when Doomsday grabbed the next stool at the bar. "This is it, Prankster. I can feel it in my bones," he said mournfully. "Our luck can't hold out any longer. We just pulled through Firekka by a hair on a gnat's ass, and now we're heading into the middle of another catfight. Why do we go looking for trouble?"

"That's what the dog days of war are all about," I replied. "We can't pretend those cats are lying down and purring somewhere just 'cause we don't see them. We have to stop 'em before they find the catnip," I joked. "Anyway, as soon as we hit Enigma, you'll be returning to the *Austin*."

"Fat lot of good that'll do me," he muttered as he slunk away from the bar. "The pilots there are just as crazy as the ones on the *Claw*!"

Doomsday was in a perpetual funk, and everyone on the carrier enjoyed feeding his moodiness by giving short shrift to his predictions. After all, none had come true in his four-year career in the TCSN. Whoo, boy! If I'd only known then what I know now!

The Colonel wasn't kidding when he said he was sending every pilot out on our assault. In fact, our roster was so thin that many of the pilots would fly solo. We were really thrilled about that turn of events. "Sorry, boys," Halcyon said, "but we've got an awful lot of space to cover." I was one of the solo missions, and my route would take me a long way from the carrier.

I raced to the launch bay and jumped into the Rapier. The tech who was hooking me up to the oxygen sensors looked up and motioned for me to pull my helmet off. "Sorry, Lieutenant Colonel," he said, "but I wanted you to know that we didn't have time to finish all the diagnostics after our repairs on the Rapiers."

My Last Patrol from the *Tiger's Claw*

We made it through the drive units and eject systems, but we couldn't get to the radar and targeting units. Just wanted to warn you ... we don't usually let ships fly unless every system checked one hundred percent."

"Appreciate that heads-up, Lefty," I replied, and whipped my helmet back on as the flight-line warning klaxon sounded.

The Destruction of the *Tiger's Claw*

My patrol was the most isolated of all. I would be 75,000 kilometers from any other fighter wing at the closest. I knew I'd have to stay alert, because help was a long way off.

I hit the first nav point without seeing an asteroid, Kilrathi mine, or enemy ship. It was kind of fun just cruising along at 250 KPS and letting autopilot handle all the navigation while I scanned the radar. I was running through a check of the arming sequences on the guns when a large red blip flashed on the radar display. I wasn't sure whether I'd seen ships or just caught a reflection from the auto-pilot light out of the corner of my eye.

"Maybe it's a glitch," I muttered to myself. "Lefty said they hadn't run the finals on the radar."

I switched to targeting mode on the right VDU, held course, and proceeded with caution. I kept checking all the camera views, just in case the radar wasn't working properly. Auto-targeting didn't reveal a thing.

I was just starting to relax, and thinking that the blips had been a vision, when six fighters materialized in front and to the left of me. They were too far away for a visual ID, and the right VDU still didn't show anything. It just sat there while six enemy ships passed right by.

They were flying a two-wing formation. I remember thinking that the electronics must be in sorry shape for something like this to have happened. I didn't know whether to trust the missile tracking, the gun targeting, or any of the computer-related functions on the Rapier. When in doubt, play it safe, I thought.

Either the enemy ships hadn't seen me or they were ignoring my presence, because they just kept to their course. I turned to follow and had just taken up a position on their rear when they disappeared. There was no flash, so I knew they hadn't jumped anywhere. There were no explosions, no debris, nothing at all.

I rubbed my eyes and wondered whether I should have had that last mug of Goddard Special last night. Don't be ridiculous, I thought. It had been more than 16 hours since my last drink.

I started a classic search route, flying larger and larger concentric circles in an attempt to locate the enemy fighters. "Damn," I grumbled. "This is a fine time to be without a wingman." I never saw another enemy ship, even though I searched a circular area almost 8000 kilometers in diameter. It took an hour at full speed.

My flight to the last nav point in the patrol route was uneventful and I was now almost 110,000 kilometers from the *Tiger's Claw*. Suddenly, through the crackle of static in my headset, I heard the Mayday. It was the *Claw*.

"Mayday, Mayday. The *Tiger's Claw* is under attack. All Confederation craft please assist."

I slammed my new destination into the nav computer, turned hard to the left, and kicked in the afterburners. I didn't have enough fuel to keep them lit the whole way back to the carrier, but I hoped I could get close enough to head off any other Kilrathi pilots who were racing to join the battle.

I could tell the carrier was in trouble when the comm operator stopped using the normal protocol. "They've got us surrounded. There's four ... no, five ... I can't tell how many wings are out there. We're getting hammered here! Launch bays destroyed. Conning tower heavily damaged ... help us out here. We're losing power"

That was the last thing I heard. I desperately hoped it was just a communications problem, but as I neared the carrier's last known location, the only blips on the radar were blue and represented other fighters.

"Hold it," I said to myself, "the radar's working just fine. Why didn't it pick up those Kilrathi fighters?"

I didn't have time to think any more about that, because the airwaves were alive with the transmissions of all the pilots who were returning to assist the carrier. The only problem was that the carrier hadn't survived the assault.

Debris was everywhere, and an ID panel slowly tumbled by on my right. It got very quiet, and I felt like I was part of a tragic space ballet as the fighters slowly circled the site of the battle.

It was eerie. It was sad. It was impossible. Colonel Halcyon, Lefty, Shotglass, and more than 750 others were dead. How had an enemy force been able to wreak such destruction without any of our patrols intercepting them?

From the silence, Angel's whisper seemed like a roar. "There's nothing to be done, pilots," she said. "Form a convoy pattern and

let's head for the *Austin*. The coordinates are already in our nav computers. Keep radio silence, and watch your six. Iceman out."

The flight to the *Austin* was the worst of my life.

A Charge of Treason

The debriefing was long and brutal. I had been the only pilot to encounter any enemy fighters, but my story of ships that mysteriously appeared and disappeared was met with disbelief. About an hour into the session, a Warrant Officer entered and whispered something in Colonel Fratworth's ear.

"Prankster, where's your flight-data recorder?" the Colonel asked. "You know it's against regs to tamper with the black box."

"I didn't tamper with anything," I replied defensively. "As soon as we hit the deck, I came straight to the briefing room."

The Colonel ended the debriefing abruptly, but not before issuing a general order. "All pilots, except those from the *Austin*, are restricted to quarters for the next 24 hours," he said. "A full investigation will commence immediately. Each of you can expect a visit from Intel during that time. Cooperate fully," he said.

On the way to quarters, Spirit came up alongside and offered some encouragement. "Losing the black box is serious, Prankster," she said, "but I am certain it will turn up eventually. It has been a trying day for all of us, and sleep will not come easily. When this is over, we'll take out our frustrations on the enemy."

"Count on it," I said, and opened the door to my assigned cabin. That's when the building emotion broke through my facade and the tears began.

Intel didn't just visit, they grilled me like a piece of swordfish. Apparently, the *Claw's* data recorder had been recovered and revealed enough information to identify the enemy pilots who had hit the carrier as coming from the sector I had patrolled.

I explained about Lefty's comments concerning the electronics on the *Rapier*. I recounted the story over and over again of the phantom enemy ships I'd seen near Nav 2 on my patrol. It was obvious from their expressions and comments that I was being blamed for the loss of the carrier.

"How can you expect us to believe such a preposterous story?" Major Pyle exclaimed. "No Confederation pilot has ever reported anything even vaguely similar to what you're telling us right now. We've had your *Rapier* checked out, and your radar system was in perfect operating condition. Your data recorder is missing. We're recommending charges."

They left me to my own thoughts after making sure I understood that I was under house arrest until further notice. No one was allowed to communicate with me, and my computer access privileges were suspended. The court martial papers were delivered the next day, charging me with treason. In normal circumstances, the charges and papers would have taken months to prepare, but Admiral Tolwyn, under the War Powers Act of 2634, had speeded up the process.

I won't bore you with the details of my trial. If you're really interested, read *A Treacherous Hero*, by Janet Williamson. Published in 2657, it was on the best-seller list for 11 months. Suffice it to say that the treason charges were reduced to mere negligence for lack of evidence. My rank was reduced to captain. Immediately thereafter, I was ordered to a meeting with Admiral Tolwyn, who had come to the *Austin* for the military tribunal.

In no uncertain terms, Tolwyn made it quite clear that he thought I was guilty of the original charges. "There's no place for people like you in the TCSN, Captain," he intoned. "I've already written out your resignation. If you'll just sign these triplicate copies, we can end one of the most disgusting chapters in Space Navy history."

There was no way I was going to give this guy the pleasure of forcing me out of the Navy. I'd performed every duty ever assigned to me with all the professionalism I could muster. I'd watched friends die in the war, and still had a score to settle with the Kilrathi. Worst of all, I'd told the truth and Tolwyn was pulling a power play. I knew that if I resigned, the reputation would stay with me forever. At least in the Space Navy, I might have the chance to put the charges to rest forever. I didn't care how long it took.

"I won't sign those papers, Admiral," I said.

Tolwyn's face was a brilliant red and the vein in his forehead looked like it was about to burst. "I can't force you to resign, Captain, but I can make sure you spend the rest of your career on the most remote outpost in Terran-controlled space," he said. "I'm transferring you to InSystem Security. Enjoy your duty on the Caernarvon Space Station. At least there, you won't be able to stab the Confederation in the back again. Now get out of my office. I hope I never see your face again."

The Admiral had cut my orders so that I would leave within

Assignment: Caernarvon Station

Visiting Sick Bay

hours for Caernarvon. He had ordered a pilot's briefing for the same time period, to ensure that I wouldn't have time to visit with any of my former friends from the *Tiger's Claw*. Then I remembered that Maniac had been transferred to the *Austin's* sick bay, shortly before that final battle. Unlike other Confederation carriers, the *Austin's* medical facility included a psych unit.

Maniac looked a bit dazed when I entered, but he recognized me right away. "Hey, it's Prankster," he said. "I guess you're here to beg me to fly on your wing again, huh? We were the best, old buddy. There wasn't a cat around that could handle us, was there?"

"Don't you remember what happened on our last flight, Maniac?" I said. "You wouldn't listen to any orders, and you just kept trying to ram the enemy ships. You're in sick bay now."

"Aww, shucks, Prankster," he replied, "Thanks for the compliment, but I wasn't the only hero on that patrol. You must have taken out one or two of those fighters yourself. Just wait'll we get together again."

Good grief, I thought. Maniac just hears what he wants to hear. This is pretty sad.

"Look, Maniac, you've got to try and listen to me. Really listen, okay?" I said. "Things are different today. The *Tiger's Claw* was destroyed last week. Other than the pilots who were out on patrol, everyone was lost." I went on to explain everything that had taken place in the weeks since he'd been transferred to the *TCS Austin*. Once during my recollections, I thought I noticed him actually focus on what I was saying.

His first response was so logical that it startled me. I didn't expect any understanding of the situation, considering his reply to my first statement. "Just remember what you told me, Prankster. Just hang in there and everything will work out," he said.

Before I could reply, the dazed look returned and he started to speak from his fantasy world again. "I'm going to be a hero again soon, Prankster. I heard that Halcyon wanted to promote me to command a fighter wing, but I sent a note turning down his offer. I can do more for the war from the cockpit."

He was really rambling now. "This morning I talked with the Admiral, and I'm sure he said he was grooming me as his replacement. I'll probably be out of here any day now. This Watson's disease has almost run its course, so I'll probably be flying again in a week or so. I'm ready. I'm in tip-top shape. I've

been working out in the gym every day, and spending a lot of time in the simulator too. I'll put in a good word for you with Tactical Command, too. They're always stopping by and asking my opinion of our next move in the war. ... "

He wasn't missing a beat, and his eyes weren't even focused on me anymore. I think he was staring at the wall behind me.

I got up and started walking toward the door. He stopped talking when I reached the door. I turned around to make sure he was all right, and he turned his head toward me and winked. Then he turned back away and started up again.

"What was that all about?" I thought.

Caernarvon Station was the pits. It was one of the oldest active space stations and my quarters reflected its age. Looking back, it's hard to believe I made it through 10 years of the most boring duty in the Space Navy.

Caernarvon Station was originally designed as a research outpost for the Intergalactic Science Council (ISC), but in the year preceding my arrival, its scientific staff had been sent to a newer facility in another sector. When the TCSN took over, it was put into commission as a monitoring and reconnaissance station for the Enigma Sector of space.

Giving you a 10-year history of my years on the station would be the most boring reading since the Congressional Record during the latter part of the 20th century. Suffice it to say that my responsibilities mainly involved punching keys on a computer, analyzing the data from remote-space sono-buoys, and tracking the progress of various space probes. Only an occasional patrol route in a light fighter broke the monotony until the year 2664. Until that time I never heard, sighted, or suspected the presence of the Kilrathi in our sector.

I tried to keep track of the war, the pilots I had known on the *Tiger's Claw*, and any new information on the Kilrathi through the computer network. It was, in some ways, my only direct connection with the war effort. I wasn't flying much any more, but I always scanned the databases for the latest dope provided by our intelligence services for combat pilots. If I ever did run into the Kilrathi again, I wanted to be ready.

In the last nine months I spent on the station, I discovered that, after a lull of almost nine years with only sporadic contact with the enemy, the action was heating up again. Of course, the

Ten Years of Boredom

new data from Intel increased at the same rate.

While it would be impossible for me to remember, or recreate, everything Intel sent across the network, I can describe the major differences in strategy and tactics that evolved during that time. The technology of our own ships had advanced considerably, and with tractor beams, new weapons, and new ships, our corresponding tactics and skills had to be updated. Of course, the Kilrathi had upgraded their ships, and new pilots had emerged from the pack as the best in the enemy's fleet. Their strategy and tactics had changed as well.

The New Tactics of Space Combat Operations

Watch the Rear Turret Guns on Heavy Fighters



Using the Tractor Beam



The changes in space combat and other operations in the 10 years since I'd been assigned to the *Tiger's Claw* were based on advances in technology. Confederation pilots hadn't come up with any new acrobatic maneuvers that would guarantee a kill. Tactically, the afterburner slide was still the most effective move in a dogfight. The pilots in 2664, however, had to approach dogfights with a new respect.

The two most powerful fighters in the Kilrathi fleet were the Jalkehi and Grikath. They were both extremely heavy ships with an impressive array of forward guns. The Jalkehi carried a particle cannon and four lasers. The Grikath carried three neutron guns. Firepower alone didn't alter the way we fought against the heavy fighters, but a change in the location of their guns had a significant impact on our strategy and tactics.

Other than capital ships, the Grikath and the Jalkehi were the only ships that had rear turrets. While we had always looked to approach the first heavy fighters (Jalthi and Gratha) from the rear, the presence of the neutron guns on the backs of the new fighters altered our game plan. After recent engagements against these ships, our pilots had abandoned our tactic of using Javelin heat-seeking missiles and our most powerful guns from close behind. Attacks to the sides of the ships were the most prudent.

Acceleration and maneuverability had become the weak links in the defensive capabilities of the Jalkehi and Grikath. Their acceleration ratings were average and bad respectively, so only our Broadwords had any trouble keeping up. Over the years, our pilots had determined that attacking from the side with the most powerful gun in the arsenal was the best course against these fighters. When a pilot did attack from the rear, the afterburner slide was employed to reduce the chances of being caught by the rear-turret neutron guns.

Confederation Sabres and Broadwords were equipped with a tractor beam that was used in rescuing pilots and retrieving other objects in space. The tractor beam could only be operated from the rear turret. The tractor beam was extremely powerful, but there were a couple of points that would ensure success.

Since the rear turret was used for both the tractor beams and neutron guns, a switch (the G key) was used to toggle between the two functions. In the heat of a dogfight or rescue operation, it

was easy to forget to change from the default "guns" setting. Nothing could be worse than putting yourself into position for a pickup, then blasting the object or individual away with your guns. Always be certain that you check the setting before engaging the tractor beam with the fire button.

Tactical Command issued a recommendation for the use of the tractor beam. The safest method to retrieve an object was to fly past it, hit the backspace key to bring your engines to full stop, then switch to the rear turret and begin the pickup sequence. If your engines were still running when you moved to the rear turret, they would automatically accelerate to maximum velocity and increase the time needed to tractor the object.

Engaging Stealth Fighters

Author's Note

This information was not found on the computer network at this point in time, since I was the only pilot who had ever seen a stealth fighter. Instead, the information comes from my own encounters with them. I've included it here for the benefit of Wing Commander II players.

The Kilrathi Stealth fighters might have been the most difficult enemies to engage unless you were aware of the chinks in their shields. When an invisible Stealth fighter reappeared, its shields hadn't yet had time to regenerate. Confederation experts theorized that the power needed for their cloaking capability caused the problem. At any rate, Stealth fighters were most vulnerable when they first reappeared in space. Pilots who kept a close watch on their radar screen, and turned and fired quick volleys at the first sign of their presence, were often rewarded with a one- or two-shot kill. If you knew Stealth fighters were in the area, you didn't fly in a straight line for more than 10 seconds. That would have allowed them to reappear in a perfect attack position.

Run-and-Gun

The appearance of rear turret guns on our Sabres and Broad-swords spawned a new tactic in space combat, commonly known among our pilots as the "run-and-gun." Kilrathi pilots, even those on escort duty, have a tendency to chase anything that runs away from them. In the past, we never wanted to turn our engines toward the forward guns on any enemy fighter. Now, however, we can take advantage of our rear turrets and bait the enemy into a rear attack, then blast them away.

The tactic seemed to be most effective when you turned away from an enemy fighter or fighters and then moved the throttles to full. As soon as the enemy pilots appeared close behind on the radar screen, the pilots quickly switched to the rear turret, then hit them with rapid-fire volleys from the neutrons.

Author's Note

Only in the Wing Commander II game was it necessary for the pilot to control the forward and rear guns. In real life, gun crews handled the turret guns.

Torpedo Runs

When phase shields first appeared on Kilrathi capital ships, Confederation pilots were stymied. It was impossible to break through the shields using our conventional missiles or guns. It didn't take long, however, for our research and development teams to design a weapon that would slice through the shields. The torpedo was the weapon, but it required specific procedures to ensure successful delivery.

The effectiveness of torpedoes was affected by the range at which they were fired. The power of the torpedo blast increased as the range at which they were fired decreased. In addition, our torpedoes could be destroyed by flak cannons. When torpedoes were fired at longer ranges, it was more likely that Kilrathi gunners could destroy the weapon before it connected.

Since it takes a long time for torpedoes to lock onto a target, Confederation engineers had determined that only ships with turret guns would have any chance at delivering the weapon. The turret guns were needed to engage Kilrathi fighter escorts that would attack during a launch procedure. Tactical Command had produced a procedure for our Broadsword and Sabre pilots that increased the odds of success:

1. Destroy enemy fighters before starting a torpedo run. It didn't guarantee that new fighters wouldn't appear later, but it gave us fewer enemies to worry about.
2. At a range of 8000 to 10,000 meters, select the torpedo (W key) and lock the target (L key). This started the torpedo-lock sequence, which took about 20 seconds to complete. Staying at long range, either by stopping the engines or moving at slow speed, prevented your ship from taking heavy damage until the lock sequence was completed.
3. When the torpedo-lock sequence (not target-lock) was completed, we increased speed and headed straight for the target. Our path couldn't waver, or we would lose the lock with our weapon.
4. At a range of 2000 meters, we launched our torpedo.

While the above procedure increased the odds of a successful torpedo strike, Kilrathi gunners were still able to knock a torpedo down about one-third of the time. Since only one torpedo could be launched per run, if a torpedo was destroyed, the procedure had to be started again from the beginning.

Author's Note

In the Wing Commander II game, you operate the rear and side turret guns. If enemy fighters appear during a torpedo run, you must switch to one of the turrets and engage the enemy. You will be informed when the torpedo-lock sequence is completed.

New Kilrathi Ship and Pilot Tactics

The format first used at the academy had become the Intel standard for discussing and displaying the tactics employed by Kilrathi ships. The information on each enemy fighter type and on each Kilrathi ace was based on the state of the engagement and the amount of damage already incurred by that ship or that pilot's ship. For example, for each Kilrathi ship and pilot the tactics were based on nine categories that indicated the state of the confrontation:

1. Enemy Near — our fighter(s) were close by.
2. Enemy Slow — our fighter(s) were moving slowly.
3. Enemy Far — our fighter(s) were in the distance.
4. Enemy Tailing — our fighter(s) were close behind.
5. Head-to-Head — our fighter(s) were approaching head on.
6. On Enemy Tail — close and behind one of our fighters.
7. Missile Coming — one of our missiles was approaching.
8. Laser Hit — fighter hit by our laser/gun fire.
9. Enemy Destroyed — ship destroyed one of our fighters.

Terran Intelligence also determined that different tactics were used based on the amount of damage that the enemy ship had already taken. For example, an enemy ship might attempt a different tactic when heavily damaged than before taking any damage. So for each of the situations listed above, Intelligence provided tactics employed when:

1. The Kilrathi fighter had taken little or no damage.
2. The Kilrathi fighter had taken medium damage.
3. The Kilrathi fighter was almost destroyed.

Unfortunately, computer analysis wasn't an exact science and the profiles couldn't tell us what an enemy ship or pilot would *always* do in a specific situation. Instead, they provided percentages that told us how likely it was that a specific tactic would be employed. The percentages were provided for each of the nine categories and each of the three states of damage. For example, the profile would tell us that in a missile-coming situation when the Kilrathi fighter had taken no damage, the fighter would try a fish-hook maneuver 60 percent of the time and a tight loop 40 percent of the time. On the following pages are the profiles for each new fighter and enemy ace in the Kilrathi fleet.

Sartha Light Fighter

Enemy Near

No Damage — 70% try to tail; 30% random offense
Medium Damage — 80% try to tail; 20% random offense
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 80% strafe attack; 20% get distance
Medium Damage — 50% strafe attack; 50% try to tail
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 90% break left; 10% random defense
Medium Damage — 90% break left; 10% random defense
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 50% random defense; 50% random offense
Medium Damage — 80% rand. defense; 20% rand. offense
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% random offense
Medium Damage — 100% random offense
Almost Destroyed — 100% random offense

Missile Coming

No Damage — 100% random defense
Medium Damage — 20% break left; 80% random defense
Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 100% random defense
Medium Damage — 25% break left; 75% random defense
Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% veer away
Medium Damage — 100% veer away
Almost Destroyed — 100% veer away

Drakhri Medium Fighter

Enemy Near

No Damage — 40% try to tail; 60% random offense
Medium Damage — 70% try to tail; 30% random offense
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 80% strafe attack; 20% get distance
Medium Damage — 50% strafe attack; 50% best strafe
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 50% tight loop; 50% random defense
Medium Damage — 50% roll over; 50% random defense
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 70% random offense; 30% random defense
Medium Damage — 60% rand. offense; 40% rand. defense
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% random offense
Medium Damage — 100% random offense
Almost Destroyed — 100% random offense

Missile Coming

No Damage — 100% random defense
Medium Damage — 100% random defense
Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 50% corkscrew; 50% random defense
Medium Damage — 100% random defense
Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% veer away
Medium Damage — 100% veer away
Almost Destroyed — 100% veer away

Jalkehi Heavy Fighter

Enemy Near

No Damage — 40% try to tail; 60% strafe attack
Medium Damage — 40% try to tail; 60% strafe attack
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 100% sit and fire
Medium Damage — 100% sit and fire
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 90% random defense; 10% turn and fire
Medium Damage — 90% random defense; 10% burn out
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 100% strafe attack
Medium Damage — 100% strafe attack
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% random offense
Medium Damage — 100% random offense
Almost Destroyed — 100% random offense

Missile Coming

No Damage — 100% random defense
Medium Damage — 100% random defense
Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 10% turn and spin; 90% random defense
Medium Damage — 100% random defense
Almost Destroyed — 100% random defense

Enemy Destroyed

No Damage — 100% veer away
Medium Damage — 100% veer away
Almost Destroyed — 100% veer away

Grikath Heavy Fighter

Enemy Near

No Damage — 80% try to tail; 20% strafe attack
Medium Damage — 80% try to tail; 20% strafe attack
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 80% strafe attack; 20% get distance
Medium Damage — 50% strafe attack; 50% try to tail
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 60% random defense; 40% random offense
Medium Damage — 60% rand. defense; 40% rand. offense
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 30% zip past; 70% random offense
Medium Damage — 30% zip past; 70% random offense
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% strafe attack
Medium Damage — 100% random offense
Almost Destroyed — 100% random offense

Missile Coming

No Damage — 100% random defense
Medium Damage — 100% random defense
Almost Destroyed — 100% random defense

Laser Hit

No Damage — 50% strafe attack; 50% random defense
Medium Damage — 100% random defense
Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% veer away
Medium Damage — 100% veer away
Almost Destroyed — 100% veer away

Prince Thrakhath

Enemy Near

No Damage — 70% try to tail; 30% burnout

Medium Damage — 80% strafe attack; 20% strafe and roll

Almost Destroyed — 100% try to tail

Enemy Slow

No Damage — 80% turn and fire; 20% strafe and roll

Medium Damage — 100% strafe attack

Almost Destroyed — 100% try to tail

Enemy Far

No Damage — 100% intercept enemy fighter

Medium Damage — 100% intercept enemy fighter

Almost Destroyed — 100% try to tail

Enemy Tailing

No Damage — 50% strafe enemy; 50% turn and fire

Medium Damage — 75% turn and fire; 25% kick it

Almost Destroyed — 100% burnout

Head-to-Head

No Damage — 20% zip past; 80% strafe and roll

Medium Damage — 50% zip past; 50% strafe and roll

Almost Destroyed — 100% strafe and roll

On Enemy Tail

No Damage — 80% tail fire, 20% strafe and roll

Medium Damage — 100% tail fire

Almost Destroyed — 100% tail fire

Missile Coming

No Damage — 50% strafe attack, 50% turn and kick

Medium Damage — 50% turn and fire; 50% turn and kick

Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 70% kick it, 30% turn and fire

Medium Damage — 50% turn and fire; 50% turn and kick

Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% gloat

Medium Damage — 100% veer away

Almost Destroyed — 100% veer away

Khasra

Enemy Near

No Damage — 60% try to tail; 40% strafe attack
Medium Damage — 60% try to tail; 40% strafe attack
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 80% strafe attack; 20% get distance
Medium Damage — 50% strafe attack; 50% try to tail
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 50% fish-hook; 50% corkscrew
Medium Damage — 75% kick stop; 25% turn and kick
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 60% zip past; 40% strafe and roll
Medium Damage — 60% zip past; 40% strafe and roll
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% tail fire
Medium Damage — 100% tail fire
Almost Destroyed — 100% tail fire

Missile Coming

No Damage — 50% kill missile; 50% turn and kick
Medium Damage — 50% kill missile; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 50% kick it; 50% turn and kick
Medium Damage — 50% hard brake; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% gloat
Medium Damage — 100% veer away
Almost Destroyed — 100% veer away

Rakti

Enemy Near

No Damage — 50% try to tail; 50% strafe and roll
Medium Damage — 70% try to tail; 30% strafe and roll
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 80% strafe attack; 20% get distance
Medium Damage — 50% strafe attack; 50% try to tail
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 97% burn out; 3% try to tail
Medium Damage — 95% turn and kick; 5% try to tail
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 40% zip past; 60% strafe and roll
Medium Damage — 20% zip past; 80% strafe and roll
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 50% tail fire; 50% strafe and roll
Medium Damage — 100% strafe and roll
Almost Destroyed — 100% tail fire

Missile Coming

No Damage — 50% fish-hook; 50% turn and kick
Medium Damage — 50% kick it; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 100% turn and kick, then turn and fire
Medium Damage — 50% burn out; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% gloat
Medium Damage — 100% gloat
Almost Destroyed — 100% veer away

Kur

Enemy Near

No Damage — 70% try to tail; 30% strafe attack

Medium Damage — 70% fish-hook; 30% strafe attack

Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 100% sit and fire

Medium Damage — 100% sit and fire

Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter

Medium Damage — 100% intercept enemy fighter

Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 50% break right; 50% turn and kick

Medium Damage — 75% burn out; 25% break left

Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 30% zip past; 70% strafe attack

Medium Damage — 30% zip past; 70% strafe attack

Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 100% tail fire

Medium Damage — 100% tail fire

Almost Destroyed — 100% tail fire

Missile Coming

No Damage — 20% kill missile; 80% turn and kick

Medium Damage — 50% fish-hook; 50% turn and kick

Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 50% fish-hook, 50% kick it

Medium Damage — 50% burn out; 50% turn and kick

Almost Destroyed — 100% run away at full afterburners

Enemy Destroyed

No Damage — 100% gloat

Medium Damage — 100% veer away

Almost Destroyed — 100% veer away

The Drakhai

Enemy Near

No Damage — 50% try to tail; 50% strafe and roll
Medium Damage — 70% try to tail; 30% strafe and roll
Almost Destroyed — 100% run away at full afterburners

Enemy Slow

No Damage — 80% strafe attack; 20% get distance
Medium Damage — 50% strafe attack; 50% try to tail
Almost Destroyed — 100% run away at full afterburners

Enemy Far

No Damage — 100% intercept enemy fighter
Medium Damage — 100% intercept enemy fighter
Almost Destroyed — 100% run away at full afterburners

Enemy Tailing

No Damage — 97% burn out; 3% try to tail
Medium Damage — 95% turn and kick; 5% try to tail
Almost Destroyed — 100% run away at full afterburners

Head-to-Head

No Damage — 40% zip past; 60% strafe and roll
Medium Damage — 20% zip past; 80% strafe and roll
Almost Destroyed — 100% run away at full afterburners

On Enemy Tail

No Damage — 50% tail fire; 50% strafe and roll
Medium Damage — 100% strafe and roll
Almost Destroyed — 100% tail fire

Missile Coming

No Damage — 50% fish-hook, 50% turn and kick
Medium Damage — 50% kick it; 50% turn and kick
Almost Destroyed — 100% run away at full afterburners

Laser Hit

No Damage — 100% turn and kick, then turn and fire
Medium Damage — 50% burn out; 50% turn and kick
Almost Destroyed — 100% random defense

Enemy Destroyed

No Damage — 100% gloat
Medium Damage — 100% gloat
Almost Destroyed — 100% veer away

Gwynedd System

Series 1

Mission 1

Author's Note

The following profiles represent the actual missions I flew in the successful campaign against the Kilrathi in Enigma Sector. Game players will note that these missions correspond to the series numbered 1 through 8 in the mission map on page 216 of this book. The profiles for missions on the losing paths in the game are found at the end of this section.

Wingman: Shadow
Ship: Ferret

Captain "Shadow" Norwood and I headed out for our required monthly patrol around Caernarvon Station. Since we hadn't seen an enemy fighter in 10 years, we weren't expecting trouble.

We were flying Ferrets, light and quick little ships with a top speed of 500 KPS. Armed only with mass drivers, the ships weren't designed for heavy dogfighting, but were perfect for our short-range patrol work.

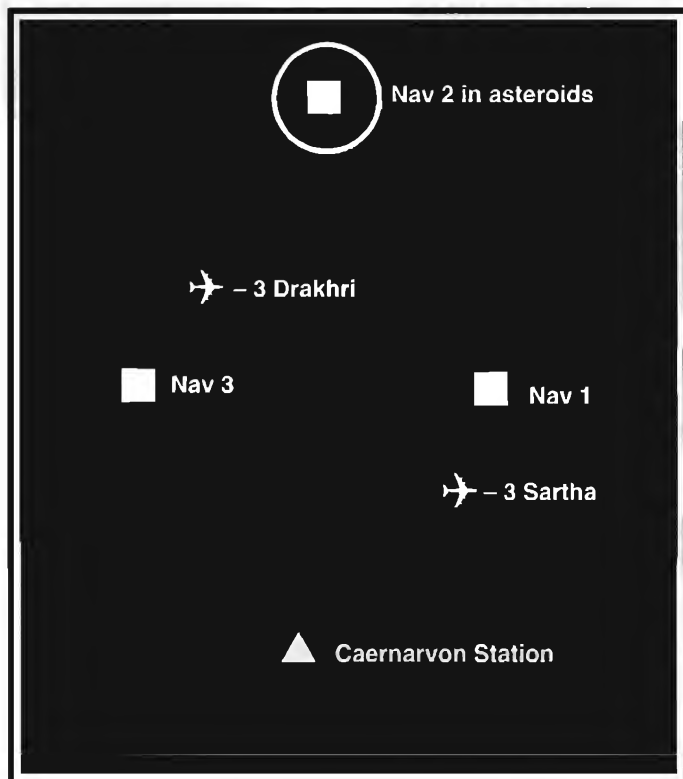
I couldn't believe it when Shadow's shrill voice announced the appearance of enemy ships. We hadn't even reached Nav 1 yet, and three Sartha were headed our way! I knew we carried more armor than the Sartha, but our mass drivers were weaker than their neutron guns. It was a pretty even match-up, except we carried a 100 KPS speed advantage at maximum velocity.

I ordered her to break and attack, then broke hard to the left and pinned the throttles on full. I lit the afterburners, circled back to the right, and came around behind two of the Sartha. One tried to turn away, but I was right there, and sent him tumbling with just two shots to his left side. Shadow yelled that she'd downed a

ship, so I ordered her to attack my target and we went after the last Sartha in the wing. It was quick and painless with two against one.

I'd settled down enough by the time we reached Nav 2 to make it through the asteroids, but the juices started pumping again when three Drakhri showed up near Nav 3. I signaled Shadow to break and attack, and rolled right to present a low profile against the three lasers on the medium fighters. They had an advantage at long range, but our mass drivers were devastating in close, so that's where we stayed. With our speed, we crowded them at every turn and released three shot volleys at our targets to record our kills.

The comm officer thought I'd gone mad when I radioed our report before landing at the station. Actually, it felt great to be back in the cockpit.



Gwynedd System Series 1 Mission 2

Shadow, who was a TCSN reservist, was a wreck after our last mission. According to regs, she wasn't supposed to fly in combat. Sometimes, however, it isn't planned. The enemy just appears. On our next mission, she knew a dogfight was in the cards.

I was on communications duty when a Mayday came in from the *TCS Concordia*. Her escort had been destroyed, her launch bays damaged, and enemy fighters were moving in for the kill.

Shadow and I raced to the flight deck, jumped into our Ferrets, and were catapulted into space. We set course for the *Concordia*, went to full speed, and engaged autopilot for our run to the Confederation-class carrier.

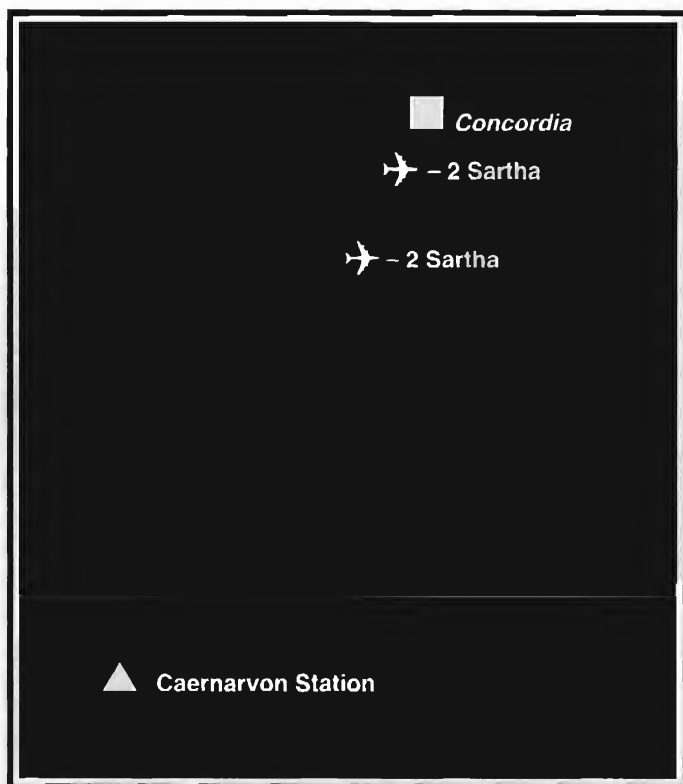
We found two Sartha when we were 19,620 kilometers away from the carrier. I signaled a break and attack, waited to see which way Shadow would turn, then took a path from the opposite side and hit the afterburners.

I almost wiped out in a collision when I miscalculated my speed and came in for a side attack on the trailing Sartha. It was close, but I recovered with a hard brake and turn that brought me into a trailing position. I went to full speed, hit the afterburners and took out the enemy fighter with two shots from the mass drivers right up her engine compartments. I couldn't see Shadow's maneuvers, but she scored as well. We headed for the carrier.

Two more Sartha were hitting the *Concordia* hard with their neutrons. I wanted to engage them before they launched a dumb-fire missile, so I transmitted taunts and they responded. The *Concordia* hit one with her phase-transit cannon, then Shadow and I had an easy job taking care of the last Sartha with our guns.

We were ordered to land on the carrier, and I couldn't believe it when Colonel Jeanette ("Angel") Devereaux, commander of the carrier's fighter wing, met us for the debriefing. We had flown many missions together on the *Tiger's Claw*.

Wingman: Shadow
Ship: Ferret

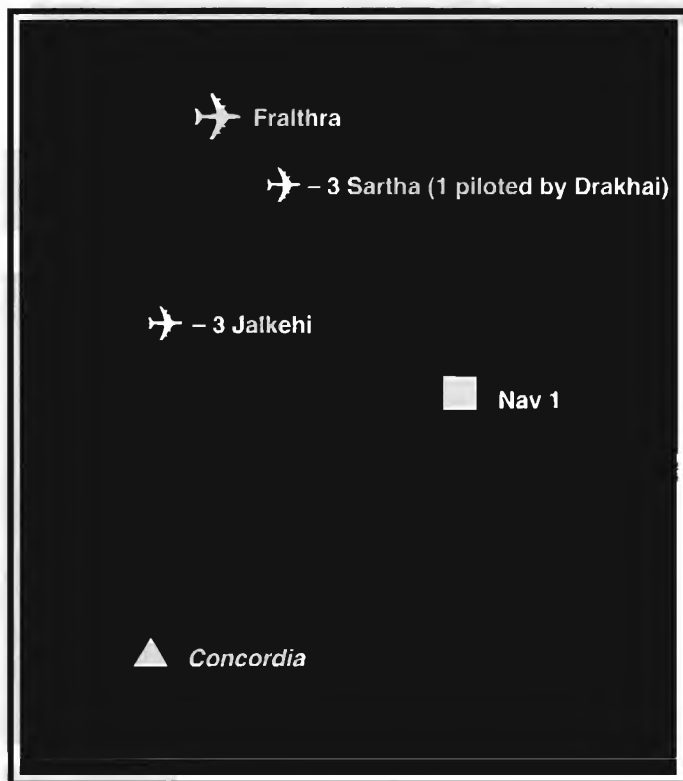


Gwynedd System Series 1 Mission 3

Author's Note

The Fralthra must be destroyed if you are to continue on the winning path in the Wing Commander II game.

Wingman: Shadow
Ship: Ferret



Things had really changed since the old days on the *Tiger's Claw*. Enemy capital ships now carried armor that prevented their destruction by anything less than a torpedo. Only our Broad-swords and Sabres carried the heavy armament.

With few fighters functional after the attack, Colonel Devereaux had no choice but to ask us to escort a wing of Broad-swords in an attack on a Fralthra cruiser. We were ordered to take out the fighter escorts, then back off while the Broad-swords did the heavy work.

Nav 1 was clear, but we found three Sartha guarding the large Kilrathi ship. The first two fell quickly, but the third was piloted by an Imperial Guardsman who could really fly. I ordered Shadow to attack my target, then taunted the enemy to keep him away from our Broad-swords, and we started to chase the Drakhai. He had us looping, circling, and rolling, but eventually our combined fire-power was just too much. With his weak side shields, all we had to do was hit him twice in quick succession.

The Broad-swords took care of the unprotected Fralthra, and

we headed back to the *Concordia* under autopilot. Shadow saw the three enemy fighters first. It was my first dogfight against a Jalkehi, and I almost lost my life when I approached one straight in from the rear. I'd read about the rear turret neutron on the heavy fighter, but it must not have registered. Luckily, my afterburners took me out of range after only one shot had connected with my Ferret.

The Jalkehi were pretty slow, but they really packed a lot of firepower. We kept taunting them away from the Broad-swords, but it took a change of strategy to take them out. We kept hitting the afterburners, pulling slides, and trying to hit them from a side position. Normally, I liked to hit heavy fighters from the rear. When they had position, we just burned away, then started our attack all over again. Our patience won the battle.

**Gwynedd System
Series 1
Mission 4**

Admiral Tolwyn was on the *Concordia*. When he found out I was flying combat missions from the carrier, he went nuts. I was ordered to return to Caernarvon Station.

Shadow and I had just requested a landing at the station, when another Mayday was transmitted by the *Concordia*. This time an internal explosion had wrecked the newly repaired launch bay, and enemy fighters were racing in to take advantage of the carrier's inability to launch.

We saw the first blips on the radar when we were 20,226 kilometers from the carrier. It wasn't just fighters. A Fralthra was also moving toward the *Concordia*. "We can't do anything about the capital ship," I thought, "but we can raise hell with that fighter wing." I ordered Shadow to break and attack against the four Drakhri medium fighters.

When you're flying a Ferret, your options are limited. We had speed and mass drivers, but that was all. The Drakhri kept trying to put distance between us, so they could hit us with their long-range laser cannons. We didn't let them. Without rear turrets on the medium fighters, we just stayed on the afterburners and tried to hit them from the back side. We stayed with a target until destroyed, since allowing them to regenerate shields would be a tragic error. We each took out two fighters.

The Fralthra continued to approach the *Concordia*, but there was nothing we could do. When Shadow noticed five Salthra on her tail, I radioed for help. The carrier still couldn't launch, but she was able to use her torpedoes and guns to help us out.

The dogfight was like being in a whirlwind. The five enemy fighters dictated the action; we reacted to their moves. It's a good thing our armor was heavy, because we took some shots. I saw Shadow's ship go down, but didn't see her eject. I managed to destroy four, while the carrier hit the Fralthra and one of the fighters.

Wingman: Shadow
Ship: Ferret

▲ *Caernarvon Station*

We were preparing to land at the station when a mayday from the carrier changed our plans.

✈ - 4 Drakhri & Fralthra

✈ - 5 Salthra

▲ *Concordia*

Niven System
Series 2
Mission 1

Still on the carrier, Colonel Devereaux assigned me to run a solo reconnaissance patrol in a Broadsword equipped with a trace analyzer. We were looking for information on Kilrathi capital ships in the area.

Nav 1 was clear, but three Jalkehi attacked when I was 14,944 kilometers from Nav 2. In the slow-moving Broadsword, without afterburners, it's really difficult to call our battle a dogfight. Maneuverability isn't the ship's strong point, but its three mass drivers and three Pilum missiles provide lots of firepower.

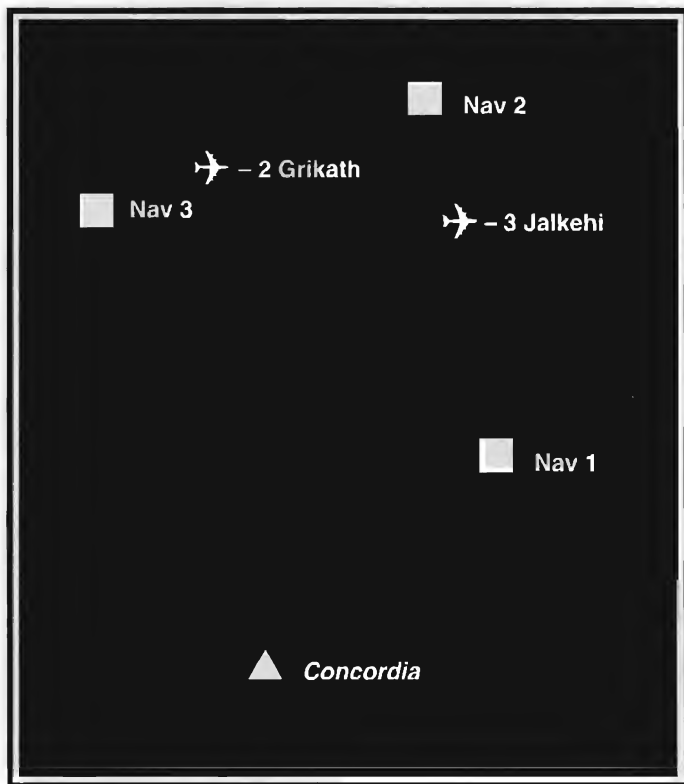
The first Jalkehi came straight in, and I took him out with three shots from the mass driver at close range. The other two had circled to the rear, and the tail gunner took out one with the two neutron guns mounted on the back turret. The last Jalkehi must have figured that a rear attack wasn't prudent. I hit him with one shot as he passed in front of the Broadsword, but he ran away to regenerate his shields before turning to attack again. These Jalkehi pilots weren't too bright, because his final move was to come in close again and attack with his single particle

cannon. I wasn't sure whether the second or third shot caused the explosion, but the wing was decimated.

I congratulated the rear gunner on some great shooting, then proceeded to Nav 2. It was clear.

I was about 15,000 kilometers from Nav 3 when two blips appeared on the radar. The right VDU showed they were Grikath, the Kilrathi's heaviest new fighter. Its shields, armor, and speed almost matched the Broadsword's. I launched a Pilum as they headed straight in, and followed up with a mass-driver volley for the quick kill. I just waited for the second Grikath to turn and attack, dropped a chaff pod when I saw his missile launch, and hit him with the mass drivers when he passed by. If these were the best pilots in the Kilrathi fleet, our success in the Enigma Sector was a foregone conclusion.

Wingman: None
Ship: Broadsword



Niven System Series 2 Mission 2

Ordered to an immediate launch, I jumped back into a Ferret, hit space, and awaited my patrol route. As it turned out, communications had been lost with the colony on Niven. I was to deliver a communications packet to the colony's leaders, and was told not to deviate from my course. I would fly alone.

I was 19,105 kilometers from my first nav point when the five Sartha came thundering in. They were zipping all around and I was just trying to keep track of where each of the fighters was. I locked a target in the confusion, hit the afterburners to stay on his tail, and fired two shots from the mass driver. I saw the debris, but he wasn't finished yet. I kept maneuvering and trying to get a rear position. When I finally did, two more shots had the pilot screaming.

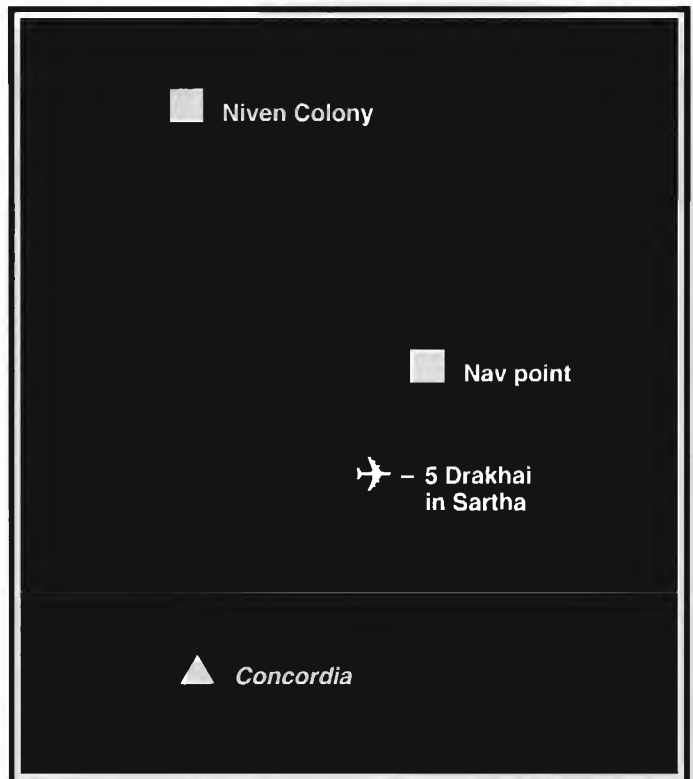
I engaged two more Sartha and took them down with the guns before I realized that I was straying off course. I punched up the nav cursor, centered my crosshairs, and stayed on the afterburners until the last two Sartha dropped their attack. The nav point was clear.

The rest of the flight was uneventful. I arrived on Niven, handed over the comm packet, and headed for a bunk to catch a few zees before my next mission.

As I tried to find sleep, I thought of how quickly my fortunes had changed. Just a few days ago, I'd been sitting behind a desk on a space station. Now, here I was on Niven, flying again, and meeting the Kilrathi in combat.

I wanted a permanent assignment on the *Concordia*, but I knew Tolwyn would fight me all the way. There wasn't any love lost between the two of us. Even though Angel was on my side, I knew I faced an uphill battle to get back into a fighter wing as a regular pilot. Stranger things, though, had happened before.

Wingman: None
Ship: Ferret



Niven System
Series 2
Mission 3

Wingman: None
Ship: Ferret

General Snell, commander of Niven Colony, wanted me to help out with an escort mission before returning to the carrier. I would escort two transports carrying medical supplies to their jump points, then proceed to the *Concordia*.

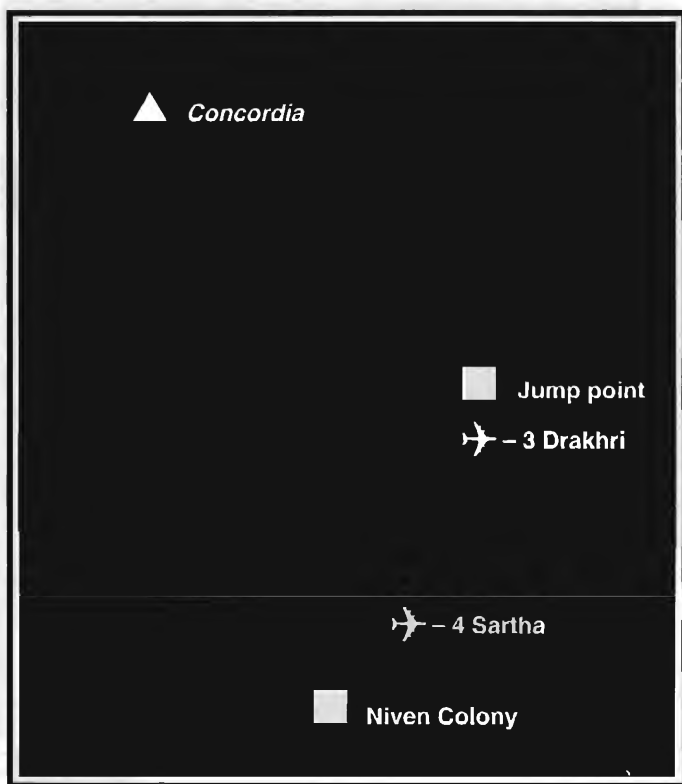
I fell in behind the two transports and engaged autopilot for the ride to the jump point. I was the only fighter escort, and hoped we wouldn't run into more action than I could handle.

We'd hardly gotten away from Niven when two wings of Sartha made a beeline for the transports. "This should be fun," I thought, "trying to stop four Sartha before they can do any damage."

I charged in at full afterburners and, after a little bit of jockeying, took out two of the Sartha fighters from the rear. By the time I was done, though, the other two light fighters were raising a real ruckus with the transports. I targeted both enemies and yelled out a few taunts. One pilot couldn't resist the challenge and turned away to attack me. I hit afterburners and went after the pilot who was continuing to attack the *Bhomis* and *Excalibur*.

He was so intent on hitting the transports that he just sat there and fired. He was a sitting duck, and I blasted him into oblivion before turning away and heading for the last Sartha in the wing. I rolled right to present a smaller target area for the Sartha's neutron guns, evaded a missile, then blasted away from the sides with my mass drivers. It was enough to scare him away and continue the mission.

Three Drakhri hit when we were 10,000 kilometers from the jump point, but I just kept them away by constantly changing targets, firing a few volleys, and continuing my taunts. I only dropped one, but both escorts were able to jump out-system. Then I just ran back to the *Concordia*, where I found out about the murder that had been committed there the day before. Things were getting bizarre.



Niven System Series 2 Mission 4

I finally heard the full story the following day. Communications Specialist McGuffin had been killed by a spy who, apparently, had used our system to transmit a message to the enemy. There was reason to believe that the spy was a fighter pilot.

I wanted to stay aboard the *Concordia* and help the investigation in some way, but we still had missions to fly. Angel ordered me to complete a scout pattern through the Niven System, searching for traces of a strike fleet headed toward Ghorah Khar.

I couldn't believe it when three ships showed up on the radar just 19,691 kilometers from Nav 1. The right VDU couldn't identify them, but they looked familiar when I finally cruised close enough for a visual ID. "Good grief," I muttered. "These are the same type of ships I saw ten years ago near K'tithrak Mang." When they disappeared I knew I was right. They were Kilrathi Stealth fighters, and I wasn't going to let them get away this time.

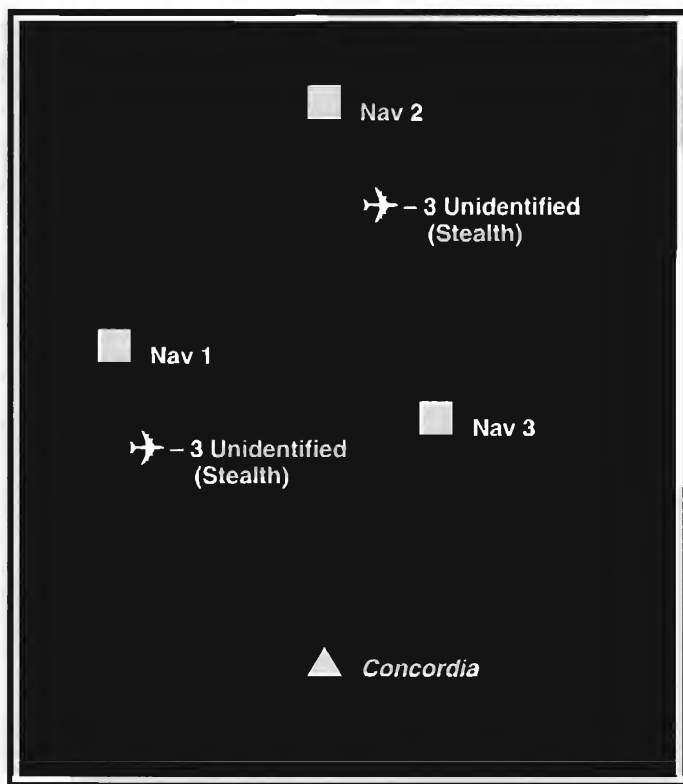
I started a semi-circling pattern, altering my speed and rolling so they couldn't get a fix on my flight path. Suddenly, shots crossed my bow, another scored, and I hit the afterburners and turned hard to the right to slide into position for a shot at the ship. I couldn't believe that the fighter exploded after just two shots from my mass drivers. I never saw the other two fighters again.

"This proves it," I thought. "I'll just take in my flight recor ..." Then I checked damage and noted that the recorder had taken a direct hit from the Stealth's guns. I headed for Nav 2.

Nav 2 was clear, but three more Stealth fighters showed up when I was 64,800 kilometers from Nav 3. They were there for just a split second, and then disappeared. I hung around for a while, but they never came back, never fired a shot, and never showed up again on radar.

"I won't be the only pilot to see them," I thought. I knew then that I was finally going to lift that 10-year-old yoke from around my neck.

Wingman: None
Ship: Ferret



Ghorah Khar System

Series 3

Mission 1

Wingman: Hobbes
Ship: Rapier

We knew the Kilrathi had flown through Niven System to get to Ghorah Khar. We didn't know where in the new system the Kilrathi would be found. I would fly a recon patrol as wingman for Colonel "Hobbes" Ralgha, the Kilrathi pilot who had sought asylum during the Firekka campaign. It made me uneasy.

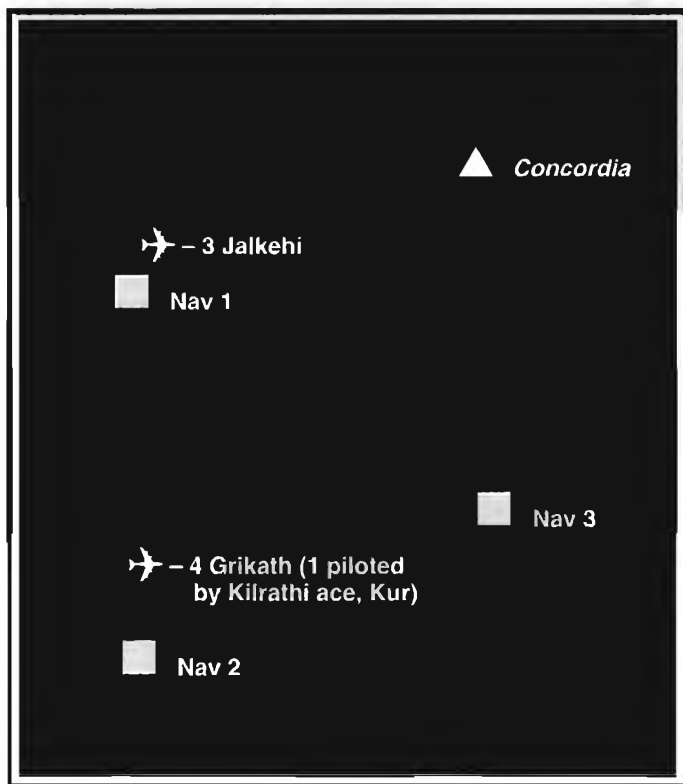
As soon as we hit space, Hobbes gave me control of the wing. "You're a good pilot," Hobbes said. "One of the best I've seen. I don't agree with the Admiral's evaluation of you."

The new Rapiers were outfitted with particle cannons, to complement the lasers and a chaff pod. The rest of the armaments remained the same.

Three Jalkehi swept in from above and ahead of our position just before Nav 1. I signalled Hobbes to break and attack, and he immediately swept by me as he raced toward the enemy. The heavy Kilrathi fighters carried a lot of armament, including a rear-turret neutron, but they were some of the clumsiest ships ever to hit space. That's what destroyed them, because we could turn and roll inside their own maneuvers and shoot at will. We

avoided a rear position because of their turrets and just blew them away with full guns.

Kur, one of the Kilrathi aces, attacked 14,094 kilometers before Nav 2. He was leading a wing of four Grikath. I ordered Hobbes to attack my target and we went after the hot-shot Kilrathi pilot. The Grikath carried only neutrons, so we tried to engage in a long-range dogfight and use our lasers. It's a good thing both of us were shooting, because the heavy fighters carried strong shields and armor. As soon as we took out Kur, Hobbes returned to the base with a damaged computer system. I was left with three Grikath. Afterburner slides seemed the best tactic. It avoided their rear turrets, allowed me to use full guns in close, and I could always run if one of them found his way to a position on my tail. It worked.



Ghorah Khar System Series 3 Mission 2

Hobbes wasn't happy when Angel ordered us to protect a Free Trader carrying vital information back to the *Concordia*. I guess he was looking for more action. He found it.

We went out to meet the *Bonnie Heather*, taking a circuitous route that included two other nav points. On the way to Nav 1, we ran into three Drakhri medium fighters. I called to break and attack and Hobbes headed for the ship on the left. I broke right to try and sweep in behind the other two, but the Drakhri spotted me and turned for a frontal attack.

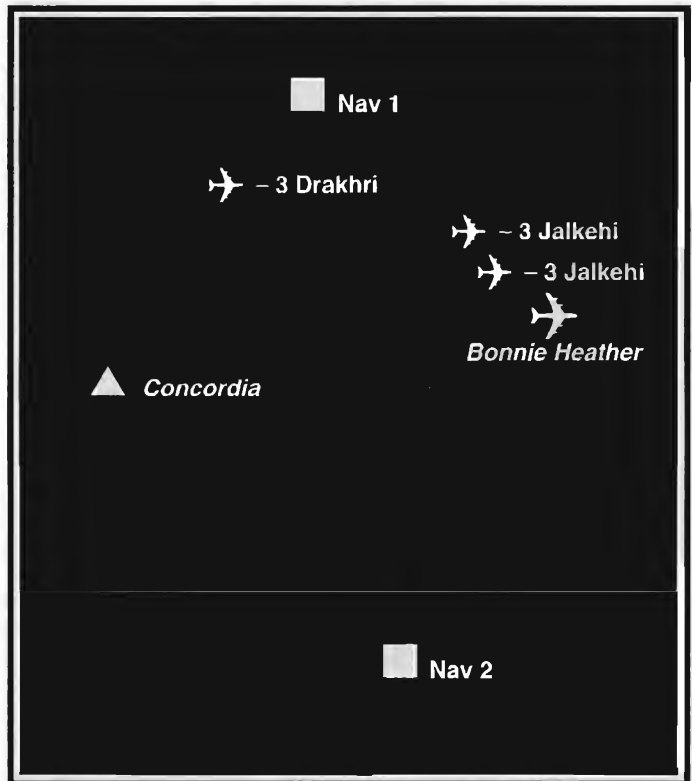
"If that's the way you want it," I whispered, and cut loose with a barrage from my laser cannon on a locked target. I used the afterburners in short spurts whenever I noticed incoming fire, but it wasn't enough to dodge every shot from the lasers. I ran away until my shields regenerated, started a slide, braked hard with the backspace key, turned, and cut loose. Since the Drakhri had stayed close, the rapid-fire lasers cut through the shields and armor and he went down with a cry of "Yaaah!"

Hobbes transmitted that he'd downed a fighter, so I told him to attack my target and switched to my particle cannon. It's a powerful medium-range gun and, combined with my wingman's guns, was enough to take out the third target.

We passed through Nav 1 without incident and had gone to autopilot when the Jalkehi attacked. There were two wings, with three in each, and I knew they were headed toward the Free Trader. Hobbes and I pulled out all the stops.

At 6000 meters, I fired a dumb-fire to let them know we were there, and armed my full guns. We needed to make every shot count. We ran circles around the Jalkehi, constantly taunting them away from the Free Trader, hitting with full guns, and dodging missiles. Hobbes and I both dropped chaff pods, then punched the afterburners to avoid the missile blast. Hobbes took out two; I hit four.

Wingman: Hobbes
Ship: Rapier

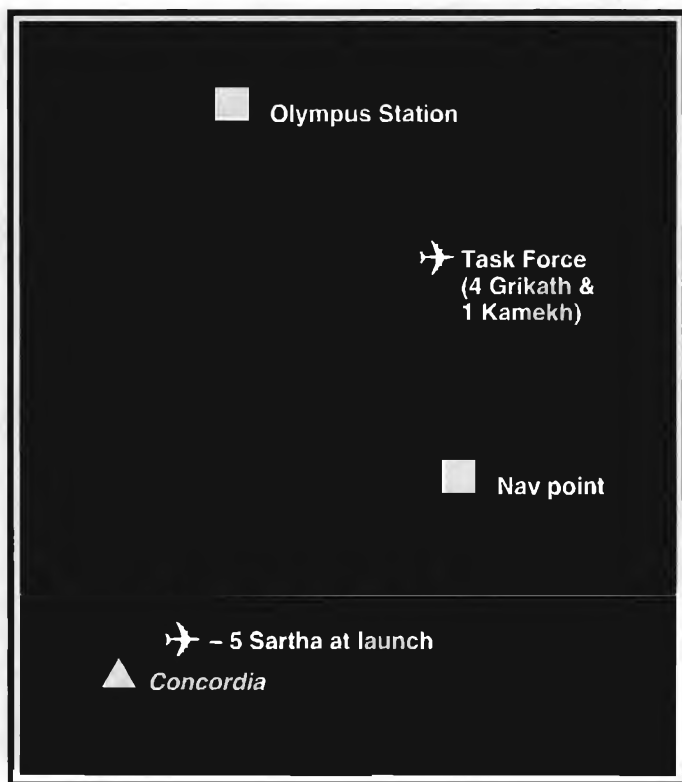


Ghorah Khar System Series 3 Mission 3

Author's Note

The Kamekh must be destroyed if you are to continue on the winning path in the Wing Commander II game.

Wingman: Hobbes
Ship: Rapier



Angel was telling us that we were to meet two Broadswords and then take on a Kilrathi task force headed toward Olympus Station, when the *Concordia* came under attack. We couldn't have launched any faster.

Five Sartha were blasting the carrier when we hit space. Hobbes and I broke for different targets and started taunting the enemy pilots to draw them away from their main objective. The Sartha were pesky, but Hobbes hit one immediately and the carrier brought one down while I was still chasing my first. I found a tail position on my first two targets, weakened their rear shields with lasers, and took them out with my Javelins. The last went down to our combined laser fire.

We met the Broadswords and headed toward the task force's position near Nav 2. We were 6033 kilometers away when we sighted the four Grikath and single Kamekh. It was up to the Broadswords to take out the corvette, while we would concentrate our fire on the heavy fighters.

Hobbes and I both fired friend-or-foe missiles into the middle of the task force before the large, torpedo-laden fighters were too close to the action. I locked a target, told Hobbes to attack it, then headed off in a different direction to head off the Grikath. Only one responded to my taunts, and when he made a wide, sweeping turn I closed in with my full guns blazing. The Broadswords seemed to be handling two of the Grikath with their turret neutrons, so I moved on the enemy Hobbes had weakened. One more shot from the particle cannon was all it took.

We kept the remaining Grikath busy while the Broadswords lit up the Kamekh with their torpedoes. We finished them off with tight, turning maneuvers that gave us perfect position on the ponderous enemy fighters and helped us stay away from the rear turret guns.

We landed at Olympus Station.

Ghorah Khar System Series 3 Mission 4

We hadn't been on the space station for an hour when the launch klaxon sounded. Olympus Station was under attack and all fighter wings would launch immediately. Since our ships were still warm, Hobbes and I blasted-off first and ran right into five Drakhri.

We only held a 50-KPS speed advantage, but we knew the Drakhri didn't carry rear turrets so we used our afterburners and just tried to gain a position on their rear. From there, we could launch our Javelins, and switch between particle cannons and lasers based on our distance from the target. It looked crazy on the radar screen, with ships changing position and lights flickering as we traded insults.

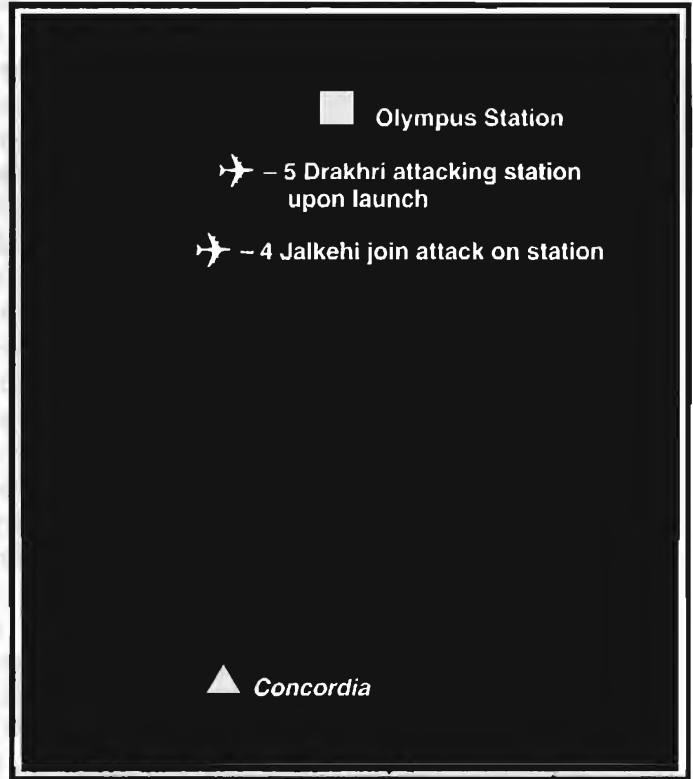
We'd taken down three when I noticed one Drakhri that was circling the station slowly and picking a position for his next dumb-fire missile. I targeted that ship, told Hobbes to attack my target, and raced in for the kill. We came at him from different approaches, but the pilot was so intent on his purpose that he never flinched. Not right away, anyway. It was the big flinch when our combined full guns sent him into the next dimension. With two Rapiers dogfighting a single Drakhri, the last Kilrathi didn't fly much longer.

I thought we'd finished the job, but four Jalkehi joined the attack. When I saw them launch missiles, I swept in front of the station, dropped a chaff pod, and zipped away. Then I switched to full guns, hit the afterburners, and started a new series of taunts. I was running out of nasty things to say, but apparently I'd said enough because three of them headed my way. That was too many.

If the Kilrathi had designed the Jalkehi with some maneuverability, it would have been more formidable, but we could sweep in, fire our full guns, and dance away before they had a chance to react.

The station survived the attack, and we headed back to the *Concordia*.

Wingman: Hobbes
Ship: Rapier



Between Missions

The unusual set of circumstances that brought me to the *Concordia* had led to the renewal of old acquaintances from the *Tiger's Claw*. I saw Angel, Spirit, and Paladin, and received some amazing news about Maniac.

I had been stunned when I discovered Angel, now Colonel Devereaux, was commanding the fighter wing on the carrier. She had always been a close friend and I knew she believed my story about the Stealth fighters that had destroyed the *Tiger's Claw* years ago. In fact, I had heard that she had made many attempts to change Admiral Tolwyn's mind about me. They were unsuccessful, but at least she'd tried.

Angel and I had flown together many times on the *Tiger's Claw*. As a young pilot, I had made some clumsy attempts at taking our relationship a step beyond friendship, but Angel was all business at the time, and always rebuffed my advances. I would have liked nothing more than to renew those efforts, but I figured at the time that she was a Colonel and I was just a pilot in her command. I wrote it off as wishful thinking on my part.

While never a carefree person, Spirit seemed more troubled than I remembered. When her fiancé was captured by the Kilrathi 11 years before, part of Spirit had died. She always hoped she would have a chance to rescue her fiancé, but I thought that after all this time, those hopes must have ended. I couldn't put my finger on a reason, but I had the feeling that Spirit would never love another man. Life had given her only one chance.

Paladin came out of nowhere. Here I was flying a mission to escort a Free Trader back to the *Concordia*, and I didn't even know Paladin was on board. As it turned out, he was the owner and commander of the *Bonnie Heather*.

We had the chance to meet a few times while Paladin was on board the carrier, but I still hadn't figured out exactly what he was doing. He'd made some vague references that led me to believe he was an agent of some sort, but I couldn't tell whether it was some official capacity or he had just taken it upon himself to help the war effort. At one point, he offered me a job, making a vague reference to the fact that "there's more than one way to win a war." There's no one in the galaxy I would rather have flown with, but I was committed to using my skills as a combat pilot, and flying on the *Bonnie Heather* just wouldn't cut it for me.

During my years on Caernarvon Station, I had tried to figure out what happened to Maniac. The last I'd seen, he was in sick

bay on the *TCS Austin*. I tried sending him e-mail over the computer network, but my messages never reached him. After a while, I just gave up the search, assuming he had gone off the deep end at some point. I didn't try to contact his family on Leto, because I didn't want to dredge up any bad memories of him.

When Paladin told me that Maniac was flying in Deneb Sector, I could have cried. "This is great," I remarked. "Imagine, 'The mad man of Firekka' and 'the traitor of K'tithrak Mang' both coming back! We have reputations to live down, you know."

"I think Maniac's already lived his down, Prankster," Paladin replied. "He saved the entire strike fleet in Deneb Sector when he forced two Ralatha to collide in space. No one's sure how he did it, and some think he was on autopilot when it happened, but there weren't any Broadswords or Sabres out there to take down the capital ships with torpedoes. If those two ships hadn't collided, this war would have taken a real turn for the worse, and our efforts here would be meaningless."

I couldn't have been happier. Maniac and I had been through some tough moments. We couldn't stand each other for a long time, and I still wouldn't want to fly with the pilot I remembered from Firekka. But when both our careers had seemed to be going down the tubes 10 years before, we'd shared an understanding of what it's like to be an outcast, for whatever reason.

I always wondered about that wink Maniac gave me as I left sick bay. Was he faking mental illness for some reason? Was he just tired of the death and destruction? I hoped I'd get the chance to talk with him again some day and compare notes. It would have been one of the more interesting meetings in space naval history.

Novaya Kiev System Series 4 Mission 1

The Kilrathi had retreated from Novaya Kiev by the time we arrived, but they'd left a supply depot behind. We wanted to take it out in case they ever returned to the system. Doomsday was my wingman, and we would fly Broadwords. The distance of trip required a refueling stop after we jumped out of the system.

It was smooth sailing all the way through the jump, and when I spotted the *Valdez* I transmitted my request to stop and take on fuel. It wasn't often that we needed extra fuel supplies.

We ran into a convoy about 49,000 kilometers from the fuel depot. It was four Drakhri escorting two Dorkathi transports. Not knowing what we would run into at the supply depot, we stuck to our guns during the dogfight. The Dorkathi fell to a standard rear attack, although the slower speed of the Broadsword allowed us to continue firing until we were only 750 meters away from a collision. That short range maximized the explosive power of our mass drivers.

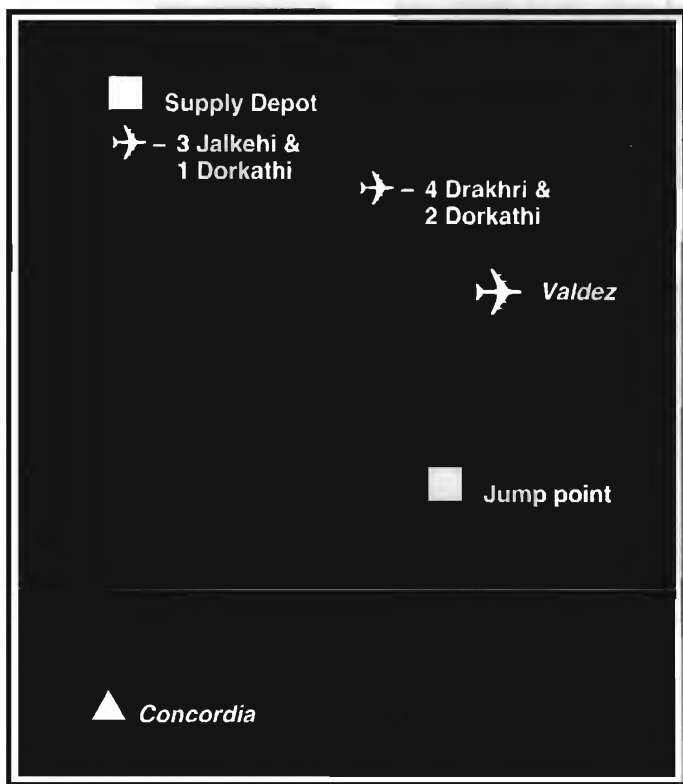
We had the supply depot in sight when three Jalkehi broke and attacked. It was a pretty even fight, since our top speeds are

close. The Broadsword is more maneuverable, however, and that brought us success. We stuck to our mass drivers, and made frequent use of our rear and side turret neutrons.

Only the supply depot and a Dorkathi remained. I wanted to take out the transport first, because I didn't want to worry about its flak cannons during a slow torpedo run. Doomsday and I used up our Pilums, then sent him screaming with our guns.

It took two runs to finish off the supply depot. At 10,000 meters, I locked the target, cut my throttles back to 120 KPS, and kept a straight course. I was at 3500 meters when the torpedo locked and the target indicator started flashing, but I waited until I hit 2500 meters to launch. The first torpedo didn't do the job, but I repeated the approach and then ran away from the spectacular explosion.

Wingman: Doomsday
Ship: Broadsword



Novaya Kiev System Series 4 Mission 2

I was as nervous as a mouse stuck in the corner of a litter box. Doomsday and I were headed out on a search and rescue mission in Broadsword. Stingray had bailed out and we had to get to him before the Kilrathi pilots did. I was nervous because I'd never before used the tractor beam to rescue a pilot and I remembered hearing of a gunner who had forgotten to switch the rear turret from neutron to tractor beam and killed one of his best friends.

Four Jalkehi raced toward us when we were still 82,418 kilometers from where the pilot had last been seen. I tried a new tactic, turning away and letting them get a position on my tail, and then hitting them with the neutrons from the rear and side turrets. That brought down two for me, and Doomsday managed a kill himself. I'd forgotten to engage the Improved Target Tracking System (ITTS) on my first mission in the Broadsword, but it worked like a charm against the last Jalkehi and almost every shot scored.

"Hey, this targeting system is great," I said to myself and then received a message from the *Concordia*. A wing of Drakhri and two Kamekh were closing on the pilot and they ordered me to return. "It's too risky," the operator said.

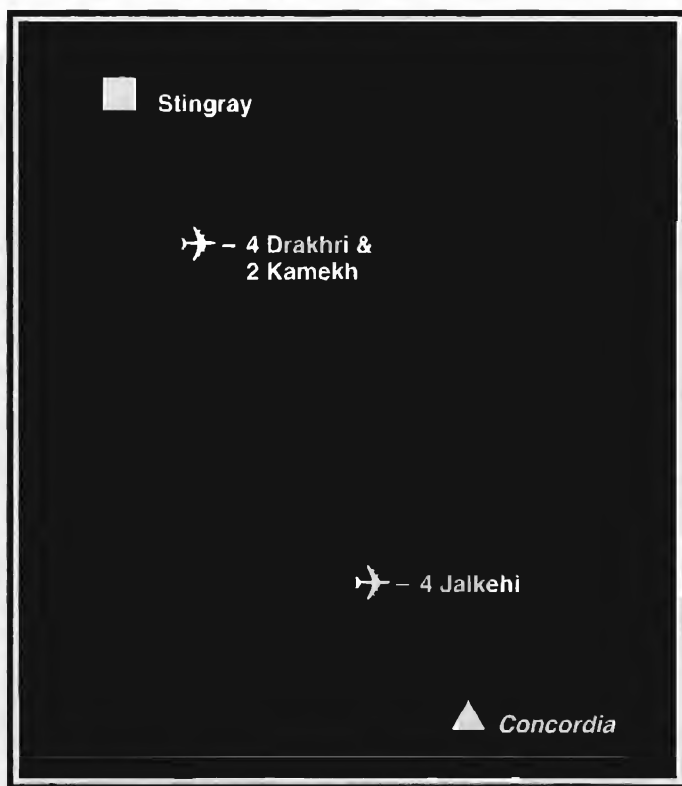
"Sorry, can't hear you," I replied. "Your signal is breaking up."

With the ITTS, we took down the Drakhri, then used our torpedoes to each take out a Kamekh.

We found Stingray tumbling through space, very close to his last known position. I headed straight for him, then lifted the Broadsword's nose and let him pass under the ship. As soon as the pilot was below me, I hit backspace to brake hard. When the yellow blip showed behind me, the rear gunner switched to tractor beam, centered the crosshairs on the pilot, and hit the fire button to drag him in.

I knew I would catch a lot of grief from Tolwyn for disobeying orders, but the knowledge that I'd saved a life was worth the abuse.

Wingman: Doomsday
Ship: Broadsword



Novaya Kiev System

Series 4

Mission 3

It was a rough briefing and Angel ended up giving Stingray and Jazz a garbage detail after they disrupted the briefing. Doomsday and I were ordered to jump out-system and assist the *Hector* in an attack on a Fralthra.

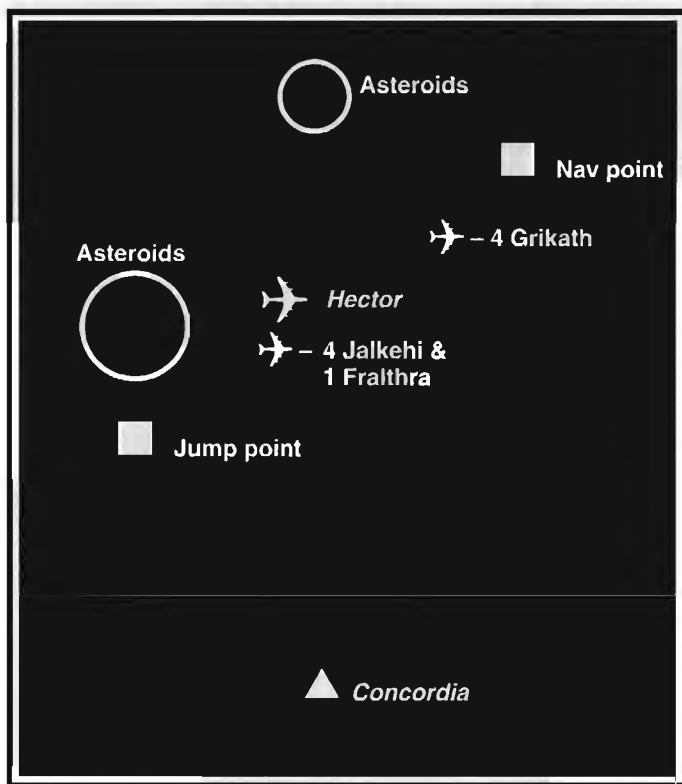
Our jump was unexciting, but we were still 7000 kilometers from the *Hector* when we intercepted four Jalkehi guarding the Fralthra cruiser. I ordered a break and attack, rolled left, punched the throttles, and tried to circle around behind the Jalkehi. It didn't work. They turned to face me. "It worked once," I thought, "so let's try that fake run again." I broke hard, spun to the right, and started away from the enemy fighters. Doomsday had already engaged one, but three stayed on my tail and when they got close enough the rear gunner opened up. He had inflicted heavy damage on one ship, and when he raced by, the starboard-side gunner knocked him down.

Doomsday scored a hit with his IITS-guided guns, and I took out the last two fighters with my Pilums and guns. I'd sweep across their stern, launch a missile, then make sure I evaded the

gunfire from their own rear turrets. I couldn't outrun the Jalkehi, so I relied on my shields to hold and tried to wait until they were close to unleash the guns. The *Hector* hadn't locked on the Fralthra, so after the fighters were gone, I ordered Doomsday to attack my target, and we started our torpedo runs. We stayed away from the Fralthra's guns until we had a lock, then took our punishment as we went in for the launch. I fired two torps, and Doomsday one, before the capital ship exploded. Then Doomsday had to eject and I called Search and Rescue before meeting the *Hector*.

We hadn't reached the Nav point when the four Grikath raced into view. Since they were slow, I just tried to stay away from their rear turrets and let my own gunners handle taking them out as they circled my ship. I had a great gun crew on board.

Wingman: Doomsday
Ship: Broadsword



Novaya Kiev System Series 4 Mission 4

Doomsday and I were called to the flight deck at the same time. We both launched in Broadwords, but I ended up being sent on a solo mission to escort a courier back to the *Concordia*.

I was rushing to the jump point with my afterburners glowing when two Drakhri jumped me from above. I was still 14,000 kilometers from the jump point, and knew I couldn't waste any time in reaching my destination. With my heavy shields and armor, I didn't have to dance around with the medium fighters. I launched a Pilum, kept my speed at 200 KPS, and just let them come. The three mass-driver cannons made short work of the first ship, and my tail gunner lit up the sky with the fiery debris of the second. I think the second pilot ejected, but I couldn't worry about taking any prisoners of war on this mission.

After my jump, I received a communication from the courier ship. They were in big trouble. Three Sartha and a single Ralatha were smashing through their defenses, and I'd never get there in time to help out. The comm officer said they would release the data capsule through one of their turrets. It was up to me to get past the Kilrathi and take the capsule back to Admiral Tolwyn.

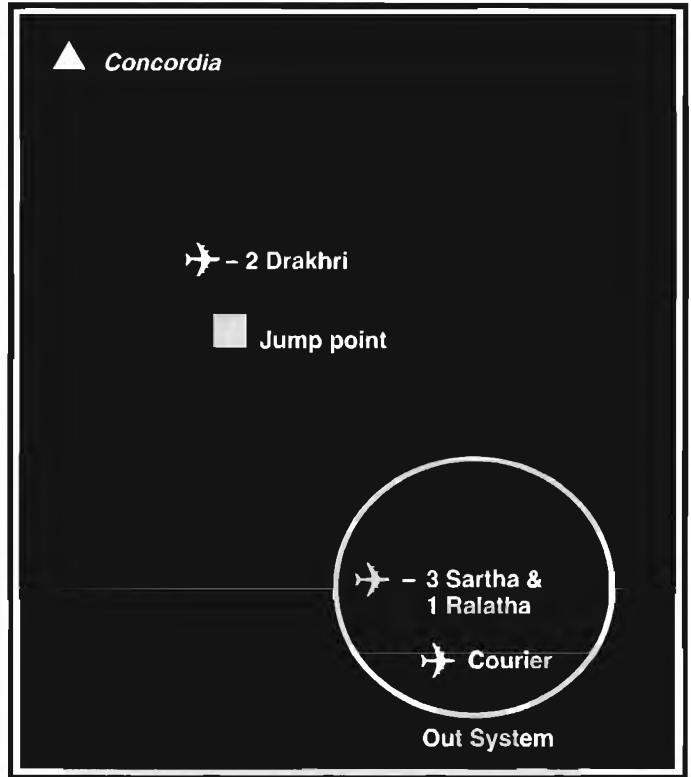
The way those Sartha zipped around, it was easier to rely on my gunners than to try to take them down with my forward guns. I did launch my last two Pilums, to give the Sartha pilots something extra to think about.

Once the escorts were down, a single torpedo run hammered the Ralatha. It was a by-the-book run. Target lock at 8000 meters, slow and straight approach until the torp locked, then launch at 2000 meters.

Without any distractions, picking up the capsule was a cinch. I went straight for it, let it slide under my wing, hit the brakes, and yanked it in.

I wondered whether my stop to fight the Drakhri had caused the destruction of the courier ship. It's one of those things combat pilots have to carry with them forever.

Wingman: Doomsday
Ship: Broadsword



Heaven's Gate System

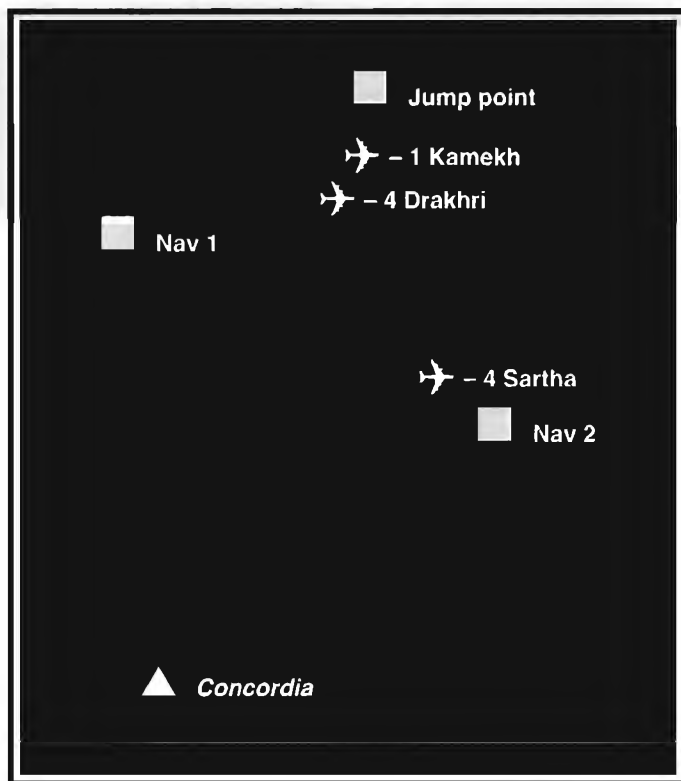
Series 5

Mission 1

Author's Note

The Kamekh must be destroyed if you are to continue on the winning path in the Wing Commander II game.

Wingman: Spirit
Ship: Epee



We were starting the liberation of Heaven's Gate from the tyranny of the Kilrathi, but we had run into a snag. It took the form of a large Kilrathi strike force in the system.

Angel paired me with Spirit for a patrol of a jump point and two nav points in and around Heaven's Gate. It was my first time in an Epee, the light attack fighter that had replaced the Hornet just five years before. I was ready to take it through its paces.

We headed first for the jump point, looking for any Kilrathi ships that had recently come in from out-system. Spirit noticed the four Drakhri before I did and transmitted their presence. When I threw the throttle forward, I was surprised at the Epee's explosive response. "If I'm not careful," I thought. "I'll lose my lunch in this baby."

I headed right, jumped on the afterburners, then followed with a left turn to start my slide. I knew the Drakhri carried lasers, and I wanted to take the fight in close to take advantage of my powerful particle cannon. I hoped Spirit was following my lead.

I hit two of the Drakhri on my first slide, then raced in behind

them to finish off the job. Spirit radioed that she'd hit one, just as I splintered the second. We combined forces to take out the last Drakhri.

As soon as I'd downed the fighters, I found what they'd been protecting. A Kamekh loomed into view. I knew torpedoes were the only way to take out a capital ship, but I wasn't sure if corvettes really fit into that class. I told Spirit to attack my target, then unleashed everything I had at the Kamekh. Spirit was hit hard by the capital ship's flak cannons and ejected. I kept sweeping in, firing my particle cannon, and then burning away. I was surprised when the Kamekh started to break up. What a rush that was!

**Heaven's Gate System
Series 5
Mission 2**

A Confederation convoy needed an escort to the jump point. Then Angel wanted us to investigate enemy movements at the point marked "unknown" on our navigation map.

Flying an Epee with Spirit on my wing, the mission was a piece of cake until we reached a point 19,832 kilometers from the last destination. That's where four Drakhri tried to make a stand. It was their last.

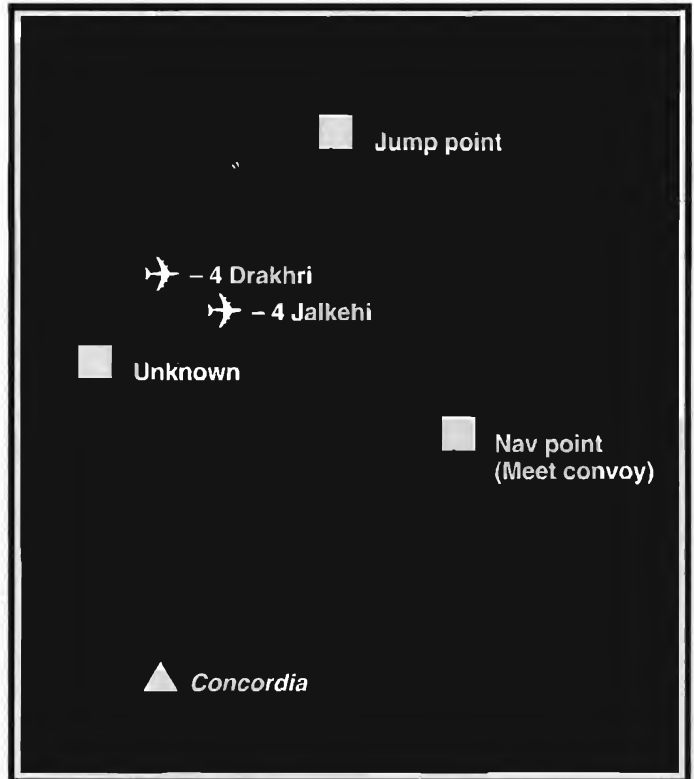
Spirit was amazing. After I signaled a break and attack, she ripped right through middle of the fighter wing. In the meantime, I was trying to circle to the right and approach from their rear. Two fighters followed Spirit, so I headed after the others.

We were outnumbered, but with more agile fighters, more powerful guns, and the ITTS, the odds were in our favor. It's tough to fight the odds, and we destroyed the four Kilrathi without firing a missile. Since they didn't have rear turrets, we stayed on their tails with the afterburners and held fire until we had a perfect target. Then we just unloaded.

Spirit got too aggressive against four Jalkehi. Our first dogfight had led us further from the last nav point, and we met them 28,000 kilometers away. It wasn't like Spirit, but she tried to match up head-to-head against their four laser cannons and particle gun. She took a path that was as straight as a stick, and paid for it with an eject warning. She took an enemy fighter down with her, but had to punch out within minutes of her attack run.

I was worried about taking three Jalkehi on at the same time, then I saw Jazz heading into the battle. "What the hell's he doing here?" I mumbled, but I was glad of his presence. He didn't take any enemy fighters out, but he kept them busy enough that I could zip around and get good position against the slow heavy Jalkehi. I hit two with guns followed by Javelins, and one with a lucky shot from a Dart with a perfect lead.

Wingman: Spirit
Ship: Epee



Heaven's Gate System

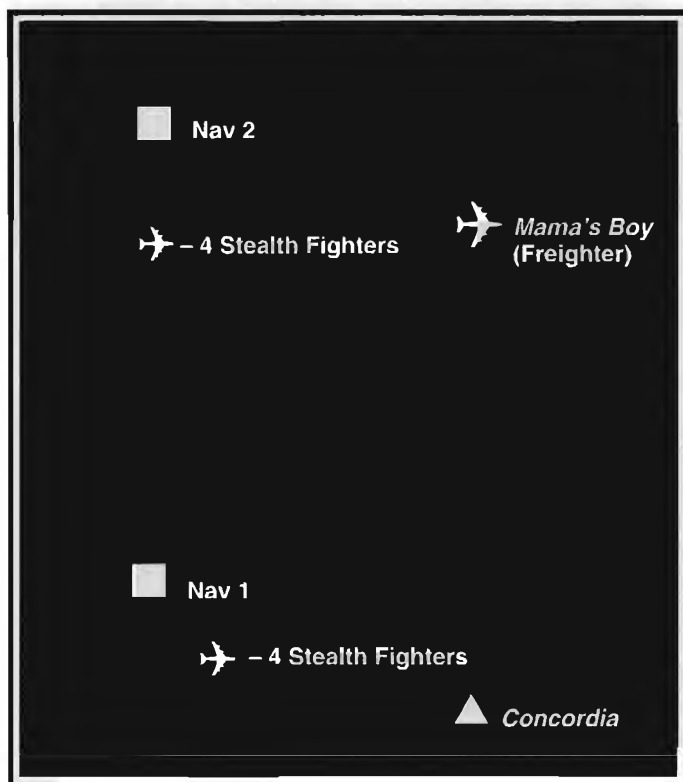
Series 5

Mission 3

Author's Note

The freighter must survive if you are to continue on the winning path in the Wing Commander II game.

Wingman: None
Ship: Epee



The *Concordia's* inventory of missiles was really low, so I was sent out to meet a freighter and escort her back with her full complement of Javelins, Pilums, and Darts. Of course, a little patrol duty by two nav points along the way would never hurt.

I was 13,010 kilometers from Nav 1 when targets designated "Unidentified" showed up on the right VDU. Right away, I knew these were the Stealth fighters and this time my flight recorder would allow me to prove their existence. I really wished Spirit hadn't been sick so I could corroborate my story with my wingman's visual ID. This was a solo mission, though.

I'd learned some basic tactics from my first two dogfights with the Stealth fighters. First, was a defensive tactic. Never hold a steady course for more than a few seconds. If they can predict your speed and heading, they'll reappear and hit your weak point. I waved the joystick around like it was a magic wand and kept changing speed, kicking the afterburners, and hitting the brakes to keep them guessing.

As an offensive tactic, I had learned that a Stealth fighter's shields are down when it first reappears. It must have something to do with the amount of power needed for the cloak of invisibility that's generated. Given that, a single shot from a particle cannon as soon as they appear, is often all that's needed to destroy one. I guess I'm the Terran Confederation's Stealth expert now.

I destroyed two of the fighters in the first group. I cruised around, but never saw any more in that location. I met four more unidentified Kilrathi 15,165 kilometers from Nav 2. I managed to destroy every one.

The only downside to the mission was a malfunctioning flight recorder. I guess it just wasn't in the cards for me to prove that these Stealth fighters exist. I'd just tell everyone I never met any enemies on this mission. After meeting *Mama's Boy*, the escort route to the carrier was uneventful.

Heaven's Gate System Series 5 Mission 4

It was successful, but the mission against the Heaven's Gate Starbase was one of the saddest experiences of my life. The traitor had tipped the Kilrathi off to our upcoming attack. A strike fleet was moving to intercept our attack force.

Angel sent three wings to meet the strike fleet, while ordering Spirit and me to make an end run and attack the starbase. We passed through Nav 1 without incident, and were just 8025 kilometers from Nav 2 when a wing of Sartha surprised us.

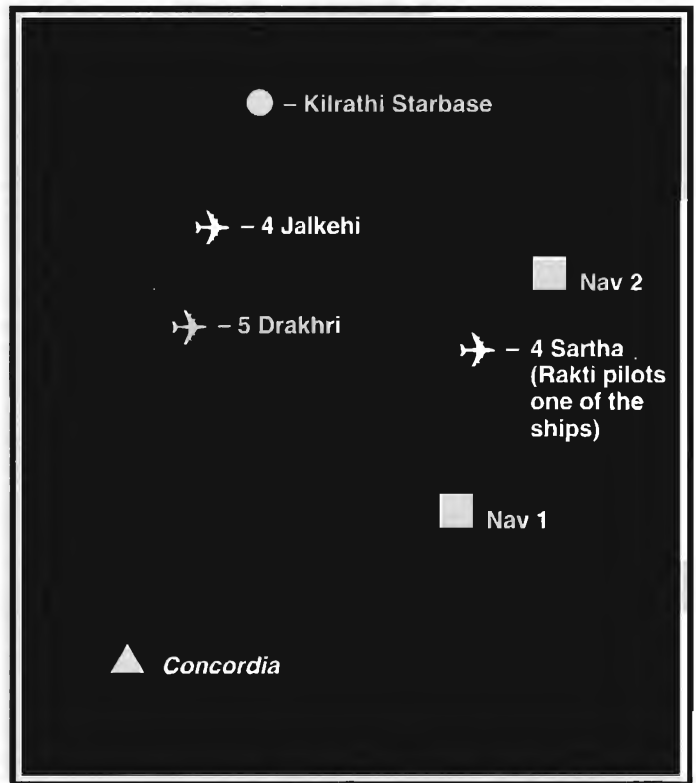
As soon as Rakti challenged us, I ordered Spirit to attack the Kilrathi ace. I wanted to blow the wingleader away before worrying about the other three Sartha. As we jockeyed around trying to follow the excellent pilot through his maneuvers, I let our rear turret gunners keep the other ships off our tail. We must have made 50 passes at the enemy pilot, with little success. Finally, just as I found a position right on his tail, Spirit cut right in front of me and blasted the ace. She launched a single IR missile, waited for impact, then rocked his engine compartment with the Sabre's combined particle cannon and mass driver.

Wingman: Spirit
Ship: Epee

We were just too strong for the other Sartha. My rear neutrons destroyed two, and Spirit waded right in against the third even though she'd taken heavy damage in the attack. This wasn't the cautious wingman I was used to flying with.

Nav 2 was clear, and as we approached the starbase, Spirit radioed that she was losing air pressure. I told her to eject, but I saw her afterburners fire and she rolled and turned on a path that took her right at the starbase. I watched in horror as she just plowed straight into the center of the base. The impact of her ship evolved into a fireball as the starbase, the Sabre's fuel tanks, and all her missiles exploded. At least it was quick, and she had died with her fiancée, a prisoner held on the starbase.

The rest of the mission was a blur, and I hardly remember the dogfights.



Tesla System Series 6 Mission 1

We were back in the Rapiers in Tesla System. Stingray was my wingman. Our mission started as a simple three-point patrol, but ended in escorting Paladin's Free Trader back to the carrier.

Nav 1 was surrounded by asteroids and that's exactly where we found three Jalkehi. Normally, I stay at a conservative 250 KPS in the rock fields, but since speed and maneuverability were the only advantages we held against the heavy Kilrathi fighters, I took a chance and bumped the throttles to 420 KPS.

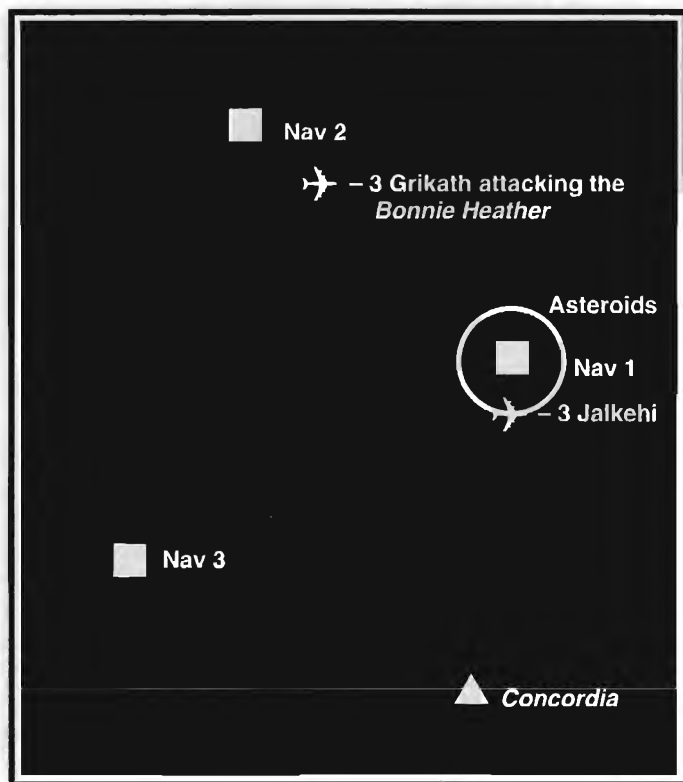
I wanted to even up the odds quickly, so I told Stingray to attack my target, and set my guns on full. To disrupt the enemy wing, I immediately sent a dumb-fire at the lead fighter. Stingray had broken to the right. I took a left path and rolled left to keep my profile as low as possible.

It's difficult to use an afterburner slide in the asteroid fields, but I relied on short bursts of speed to evade the four lasers on each enemy ship. We had to take the fight in close. At one point, I had perfect position for a kill from the side until Stingray darted in front. He was lucky that I was paying attention to his position.

Javelins were almost useless, because we didn't want to expose our noses to the rear turrets on the Jalkehi. We both took credit for the first kill. Stingray had weakened the Jalkehi's shields with his full guns, and I finished him off with a quick launch of a dumb-fire. The last two Jalkehi fell to full guns at less than 1000 meters. Close range was the key.

We ran into the *Bonnie Heather* just before Nav 2. Three Grikath were getting ready to pound it. They were so intent on their target that I was able to launch a Javelin before they realized we were close. It didn't kill the ship, but my particle cannon combined with Stingray's sure did. Next, I taunted the two pilots, and fired a dart when they were clear of the Free Trader. They finally fell to our attacks against their weaker side armor, and we brought the *Bonnie Heather* home.

Wingman: Stingray
Ship: Rapier





Tesla System Series 6 Mission 2

It was an emergency launch, and we didn't receive our orders until we were already in space. The communications operator told us to make speed and destroy two Kilrathi troop transports that had strayed from their escorts.

We used a standard tactic against the four Sartha that attacked 55,079 kilometers before the transports. At long range, we ripped them with our laser cannons. In close, we switched to the particle cannons or full guns. Since they didn't have any rear guns, we always tried to get a rear position, score with a couple gun shots, and then launch a Javelin up their engine tubes for the kill. The missiles took down two of the fighters and our guns destroyed the others. All were destroyed from the rear.

We were feeling pretty cocky, thinking that we'd taken care of the original escort wing for the transports. We were wrong.

If the transports had strayed from any fighters, it was the four Jalkehi that were just 14,760 kilometers away. Our tactics were pretty similar to those we'd used against the heavy fighters in the previous mission. Stay away from their rear, make them break their initial attack with a Pilum launch, use your speed and maneuverability, and keep the fight at close range with full guns.

When we found the Dorkathi transports, I knew they could withstand a lot of our gunfire. I wanted to concentrate our efforts, and ordered Stingray to attack my target. I ran straight in, launched a Dart, then circled back quickly. I went after the same targeting point, and launched my last dumb-fire before continuing with a traditional circling attack with full guns. We went after, and destroyed, the targets one by one. It gave us the opportunity to continue hitting the target with no lull that would have allowed them to regenerate shields.

Wingman: Stingray
Ship: Rapier



Tesla System
Series 6
Mission 3

Paladin was ready to leave Tesla System, but with all the Kilrathi in the area he had requested an escort to his jump point. Colonel Devereaux honored his request, assigning Stingray and me to the mission. After the jump, she told us to check out some bogeys before returning to the *Concordia*.

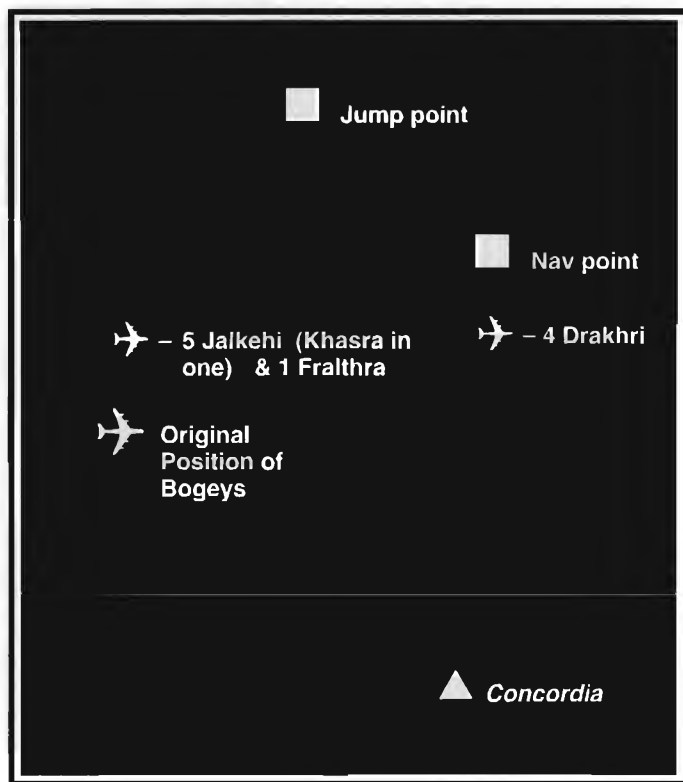
Four Drakhri went after the *Bonnie Heather* with guns blazing when we were 15,413 kilometers from our first nav point. I ordered a break and attack, then targeted and taunted each enemy fighter in turn. Paladin was doing his best with the Free Trader's flak cannon, but it wasn't much defense against the Drakhri's lasers. The medium fighters can't withstand many shots from our particle cannons, and that's what we stuck with to smash through their shields and armor. We didn't know what we might meet later, and didn't want to waste any missiles. It was an excellent move.

As soon as Paladin jumped, we received a communication that a Fralthra and fighter escort were moving toward the carrier. We couldn't take out the capital ship without torpedoes, but we

could take out its major defenses by hitting its escort wing of five Jalkehi.

Khasra let us know he was around, so I told Stingray to attack my target and stayed on the Kilrathi ace. It was sliding time as far as I was concerned, so I kept hitting the afterburners, turning hard to the left and right, and firing quick barrages from the full guns. He was so quick that the tactic wasn't very successful. Stingray was hit hard a few times and had to eject, but while Khasra fired at him, I came in from the side and launched my last dumb-fire. As soon as it exploded, I added a couple of volleys from my full guns, and Khasra was done for. I thought I'd pushed my luck about as far as it would go, so I just kept the afterburner switch buried and ran away from the rest of the Jalkehi.

Wingman: Stingray
Ship: Rapier



Tesla System Series 6 Mission 4

It was a code red alert, so I didn't even put on my shoes before racing to the launch bay and catapulting into space in the Rapier. A Kilrathi strike fleet was headed for the carrier. The *Concordia's* defense was our first objective.

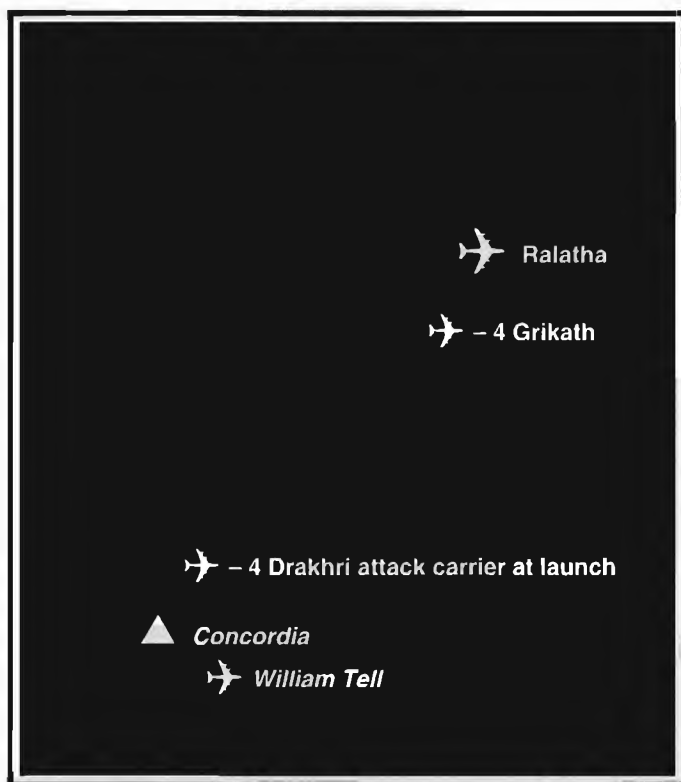
I think the Kilrathi must have sent a couple of brain-dead pilots to lead the wing of four Grikath against the *Concordia*. I turned to face the incoming fighters, and the first two just came straight ahead, seemingly without fear of our guns or missiles. It was a big mistake, and their last one.

I never turned, rolled or looped. The first Grikath was right in the middle of my crosshairs, about 2500 meters away. I launched my first dumb-fire missile, and caught him right on the nose. Then I switched to full guns, still never making a defensive maneuver and hit him with three straight shots head on. He was history. The Grikath right behind the first, never learned a thing. He kept coming straight on and I duplicated the destruction of the first enemy fighter.

Stingray and I had to do some dogfighting to obliterate the second two Grikath. I signaled a break and attack, and we just proceeded to out fly the other pilots. It was easy in a Rapier. We didn't have their firepower, but we held a distinct edge in acceleration and agility. It almost looked like the Grikath were standing still as we made pass after pass with our particle cannons blazing. We had enough sense to steer clear of the Grikath's rear-turret neutron guns.

We escorted the *William Tell* toward the Ralatha. At 15,000 kilometers from the destroyer, four Jalkehi tried to intercept us. After taunting, I took down one with a Javelin and full guns, and the second with a Pilum and full guns. Stingray had destroyed two fighters on his own, leaving the *William Tell* free to blast the Ralatha destroyer out of the sky with a stream of torpedoes.

Wingman: Stingray
Ship: Rapier



Enigma System
Series 7
Mission 1

I'm not sure why Tactical Command felt it necessary to attempt a dangerous double-jump. We'd just lost the *Tell* during a similar move, but I guess the people with all the rank must have reasons for the things they order us to do. We needed to clear a path for the *Concordia* and, after the loss of Downtown, Angel would fly the patrol route with me in Broadwords.

Our route would first take us to check out an "unknown." Then we would proceed to a jump point and head out-system to Enigma, where we would again meet the carrier.

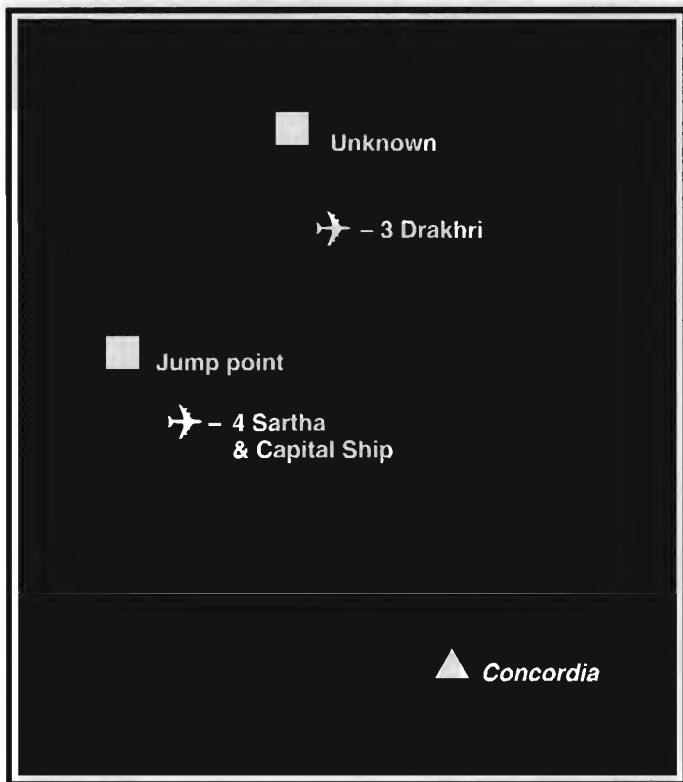
Angel saw the three Drakhri first, heading in from above and ahead of our position. I ordered her to break and attack, then headed after the lead ship with all the speed I could muster from the Broadsword's engines. It wasn't much, and since we don't have afterburners, didn't give us a chance to keep up with the medium Kilrathi fighters.

While I was having trouble putting the Drakhri in my sights, the other two Drakhri slipped in behind my Broadsword. My gunnery crews were on the mark, however, and, with some

coordinated fire from the rear and side turrets, were able to destroy the threat from the rear. The third Drakhri fell to Angel's guns, although I couldn't tell whether it was from a forward, side, or rear position.

Our jump went without a hitch, although we ran into a wing of Sartha and a capital ship as soon as we hit Enigma System. I ordered a break and attack, never expecting that Angel would go after the large ship while I tried to take out the fighter wing. The Sartha were like mosquitoes buzzing around. They were more an irritation than a threat, but my gunners and I were so busy firing neutrons and mass drivers that I didn't see Angel's torpedo run. It must have been perfect, because she destroyed the capital ship before I had even finished off the Sartha fighters. That's why she's commanding the fighter wing, I thought.

Wingman: Angel
Ship: Broadsword





We were hiding in the asteroids, while our technicians and mechanics completed repairs and maintenance on the *Concordia* and her complement of fighters. It left us vulnerable to attack.

Intel had reported a Kilrathi listening post on the edge of the asteroid field. Angel and I would go after it, but take a round-about course to camouflage the location of the carrier.

Launching into the middle of an asteroid field, we kept our speed at 250 KPS and concentrated on staying as close to our computer course as possible. We emerged from the first field and almost immediately headed into a second, hoping the rocks would hide our approach and provide an element of surprise.

Nav 1 and 2 were clear, and our rear and side gunners had little trouble handling the three Drakhri protecting the listening post. When the four Jalkehi joined the fray, the mission became much tougher. In a Broadsword, we didn't have the advantage in maneuverability and speed over the Jalkehi. They had afterburners and we didn't.

After I told Angel to attack my target, we waded into a pitched dogfight with the Jalkehi. Angel didn't last long, having to eject after taking out only one enemy ship. Now I proceeded with a vengeance, and so did my gunners. I launched the three Pilums to disrupt the Jalkehi's attack patterns and started blazing with the forward, rear and side guns.

The Kilrathi listening post's defenses weren't up to the task of stopping a torpedo attack from the Broadsword. I hit the brakes at 8000 meters, armed my torpedo, and locked the target. As soon as the target-lock indicator started flashing, I pushed the throttles forward until my speed hit 150 KPS and headed straight for the outpost. I waited until the last minute to launch the torpedo. I was only 1850 meters away, and turned away quickly once I saw the torpedo hit the listening post.

Enigma System Series 7 Mission 2

Wingman: Angel
Ship: Broadsword



Enigma System Series 7 Mission 3

Author's Note

The Ralatha must be destroyed AFTER jumping if you are to continue on the winning path in the Wing Commander II game.

Wingman: Angel
Ship: Broadsword



A Kilrathi strike force was cruising by the edge of the asteroid field where the carrier was hidden. If we could track them back to K'tithrak Mang, we could obtain the tracking data, and might be able to jump in behind enemy lines.

I would fly again with Angel. Our mission was to find the enemy, engage the fighter wing, then allow the Ralatha to jump, and quickly follow in our Broadwords.

We hit the asteroids right where our nav map indicated they would be. The rocks surrounded us at launch, then a second field appeared about 10,000 kilometers from our objective.

We discovered four Jalkehi protecting the Ralatha at our destination. The pilots were extremely aggressive, bringing the fight to us instead of making us attack. I've always found it more comfortable in a defensive position.

I sent a Pilum into the approaching wing, then ordered Angel to break and attack. We both locked onto our targets, to kick in the ITTS. If they were coming right at us, I wanted to make sure every shot counted against the heavy enemy fighter. I had discovered that the ITTS was most reliable at close range, so I tried to be patient and wait until I was within 1500 meters before unleashing a volley from the three mass drivers in the forward gun ports. My rear and side gunners were continually blazing away with the neutrons. The Jalkehi fought a good fight, but Angel dropped two and I sent two cartwheeling through space. The Ralatha jumped, and so did we.

I knew we had the tracking data, so I didn't hesitate to go after the Ralatha right away. I told Angel to attack as well, and we started classic long-range torpedo runs. Just hit the brakes, select torpedo, lock the target, wait for torpedo lock, then move in and launch. It's the only way to go when you've already taken out the fighter escort. Two torpedoes destroyed the Ralatha.

I knew we had the tracking data, so I didn't hesitate to go after the Ralatha right away. I told Angel to attack as well, and we started classic long-range torpedo runs. Just hit the brakes, select torpedo, lock the target, wait for torpedo lock, then move in and launch. It's the only way to go when you've already taken out the fighter escort. Two torpedoes destroyed the Ralatha.

Between Missions

Knowing there was a spy among the complement of fighter pilots on the *Concordia* made everyone wary. I longed for the first months I'd spent on the *Tiger's Claw*, when I was able to respect everyone on board. The atmosphere on this carrier was quite different, and it was difficult to sit back and relax after a mission. I was always looking over my shoulder and wondering if my wingman was going to turn on me in the middle of a dogfight.

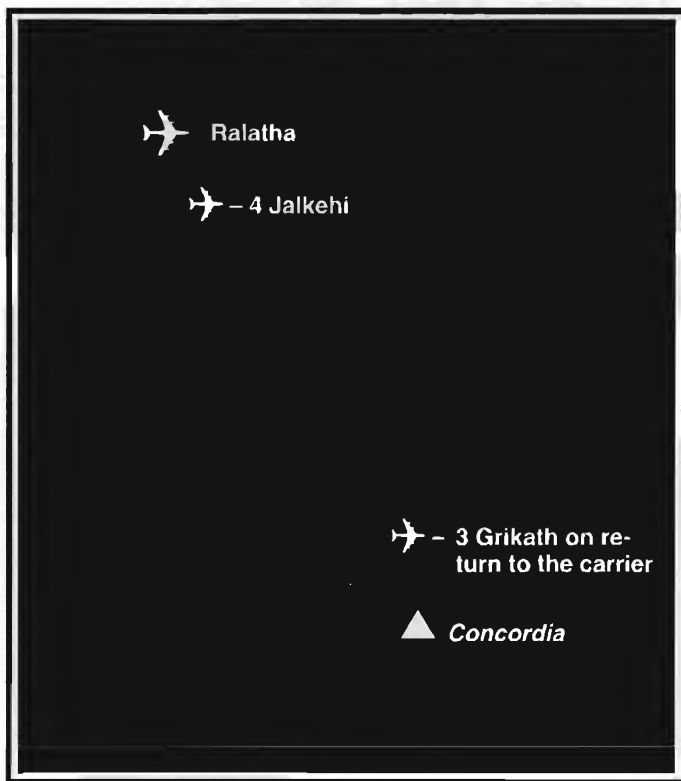
My relationship with Angel had really changed and I often reflected on where it might lead. Since she had spurned my early advances while we were stationed on the *Tiger's Claw*, I wondered, and she did too, whether our closeness was based on love or on the fact that we were the only two people on board who really trusted one another. We had shared many experiences in the last 11 years, and that fact alone, in the emotional turmoil of war, could have been enough to throw us together. We hoped it was the former, but we were enjoying each other's company too much to spend a lot of time analyzing the situation. That could wait.

Now that we had the tracking data that would take us behind enemy lines in K'tithrak Mang, we knew we faced the final confrontation in the battle for the Enigma Sector. After my first mission in the sector, 10 years before, I wanted more than anything to be a part of the final assault. I wanted revenge.

I was worried that Angel might try to protect me from harm, and order me to fly support missions. I respected her knowledge, opinions, and background, but I knew that our personal relationship could easily overshadow a logical decision. The fact was that no other pilot could match my own experience and success as a combat pilot. Even after spending 10 years on a space station, I had proven my skills in all the new fighters, against all the new enemies, and with all the new weapons. I'd been the wingleader on the most dangerous and important missions flown from the *Concordia* in the last two months. I wouldn't be denied the opportunity to finish the job.

K'tithrak Mang System
Series 8
Mission 1

Wingman: Jazz
Ship: Sabre



We were deep in Kilrathi territory and preparing for the final approach to the headquarters of the Kilrathi Empire's Enigma Sector fleet. We needed to soften up the enemy's defenses, and our next patrols would try to achieve that objective. In Sabres, Jazz and I headed out to torpedo a Ralatha destroyer. We expected significant resistance, and that's exactly what we found.

I ordered a break and attack when we found the four Jalkehi just 20,130 kilometers from the destroyer. Jazz immediately responded and raced into the middle of the Kilrathi wing, but I was surprised that I never saw him launch a missile. Even his gunfire was erratic, missing the mark by a long distance. I assumed his targeting system must have fallen out of calibration.

I fired a dumb-fire at the lead ship in the approaching wing, then pulled a right-side afterburner slide and inflicted some damage with my full guns. By the time I destroyed the first enemy with the another volley and a Spiculum IR missile, two of the Jalkehi had slipped behind me. My tail gunners took care of them, and although I ordered Jazz to attack my target, I scored the only hits on the last enemy ship and took credit for the kill.

Once the Jalkehi were taken care of, the Ralatha was simply a matter of following the standard procedure for a torpedo run. The only difference was that I waited until I was 1500 meters away to launch, and had to hit the brakes hard to avoid a collision with the exploding destroyer. I'd be more careful from now on.

We were close to the *Concordia* when the three Grikath attacked. The battle would have been tougher, but the carrier's gunners took out two of the ships with the phase-transit cannon. The slow Grikath didn't have a chance against the swift Sabre's full guns and IR missiles.

After returning, I checked the tally list and found that Jazz had scored fewer kills than any other pilot. I was suspicious.

K'tithrak Mang System Series 8 Mission 2

Jazz and I, flying Sabres, drew the assignment to fly a four-point patrol and clear the area of enemy fighters. It was the type of mission we'd flown many times before.

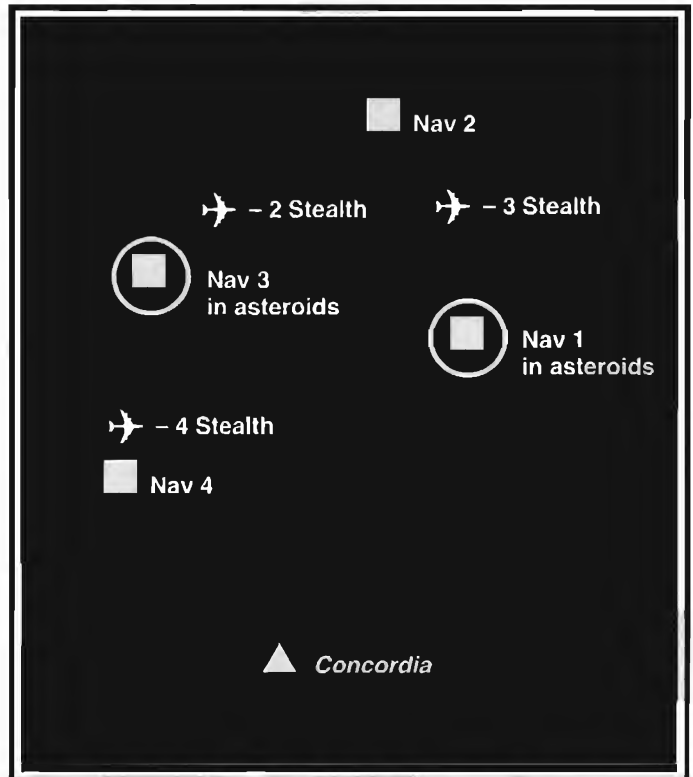
Nav 1 was surrounded by asteroids, but we didn't find any Kilrathi ships hiding in the rocks. On the way to Nav 2 — actually we were 12,260 kilometers away — three Stealth fighters jumped us then quickly disappeared. I ordered a break and attack, then ran evasive maneuvers to keep the invisible fighters from figuring out my path. I kept a close eye on the radar screen, wanting to hit the enemy fighters when they first appeared and their shields were still down. I turned to the first fighter and dropped him with a single Dart as he raced in front of my viewscreen. The next two I hit with full guns, using my ITTS. Jazz didn't score.

Nav 2 was clear, but two more Stealth fighters attacked when we were 43,000 kilometers from Nav 3. I took out the first ship that reappeared with a single shot — he was really close — and the second with three shots using full guns. Nav 3 was surrounded by asteroids, but clear of any enemy ships.

This turned into an all-stealth mission when four more attacked 18,740 kilometers from Nav 4. Using the same tactics, I took out two with my full guns. The others disappeared and never came back. I'm sure they were returning to base to make sure the Empire's High Command was aware of our presence.

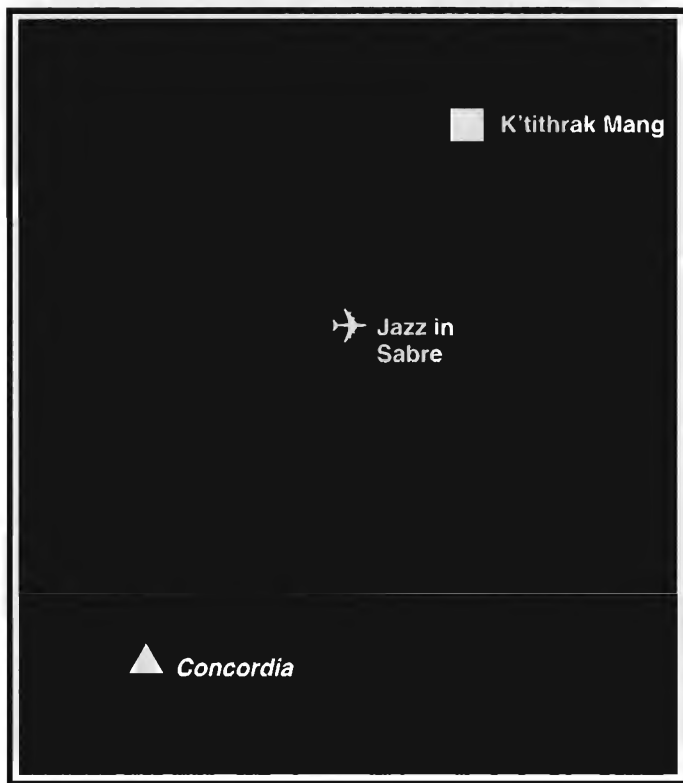
On this mission, my flight recorder worked perfectly and I knew I had finally proved the existence of the Kilrathi Stealth fighters to Admiral Tolwyn. What a relief. After 10 years carrying the reputation of a traitor, I was close to proving my innocence in the destruction of the *Tiger's Claw*. Angel and I celebrated with a few glasses of bubbly on the Observation Deck that night.

Wingman: Jazz
Ship: Sabre



K'tithrak Mang System
Series 8
Mission 3

Wingman: None
Ship: Sabre



Although the evidence was circumstantial, Angel confronted Jazz with the knowledge that he was the traitor. Jazz didn't even try to talk his way out of the situation. Instead, he pulled a gun. Angel managed to knock the gun away, and Jazz ran. He launched in a Sabre, and I got the order to go after him.

I had engaged almost every Kilrathi ace in a dogfight at one time or another, but my confrontation with Jazz was the toughest of my career. When fighting the Kilrathi, I always felt that I had the best flight technology on my side. Against Jazz, the technology was dead even, and only skill would lead to victory.

When I caught up with Jazz, I locked the target to engage the TTTS and set my guns to full. I figured that with full guns, whenever I could get into a position for a shot, it would count. I don't think my fuel would have held out for long, because almost the entire dogfight was fought with the afterburners glowing. Just when I thought I had him, he'd slide away, hit the afterburners, and run. I'd chase him, and he'd hit the brakes, then light up the burners again and just manage to get away. I fired all my

dumb-fires with not even one coming close. After a few minutes, Spiculums were everywhere, and since our ships were the same, the image-recognition missiles acted more like Pilums. They would lock onto either one of us.

I really didn't like those odds, so I dropped a chaff pod to draw the missiles, and burned away from the resulting blast. Jazz made a mistake by pulling the same brake-and-afterburner stunt three times in a row. The last time I was ready, and hit him with three shots from the full guns. I saw him eject from the debris, and although I really wanted to dust him with my guns, I used the tractor beam to pull him in.

After returning to the carrier, Sparks told me that the original flight disk from my last mission on the *Tiger's Claw* had been found in Jazz's locker. I was finally cleared.

K'tithrak Mang System

Series 8

Mission 4

Just what I was afraid of happened. Angel ordered me to fly a forward patrol protecting the carrier, instead of flying with the strike force against the Kilrathi headquarters. I wasn't going to put up with that, and I ordered Sparks to refit my ship with torpedoes, and load the strike force's navigation information into my computer.

I smashed the two Stealth fighters that tried to stop my approach about 79,000 kilometers from headquarters. I was ordered back to base, but just shut down my comm unit so I wouldn't have to listen to a lot of babbling. I had other things on my mind.

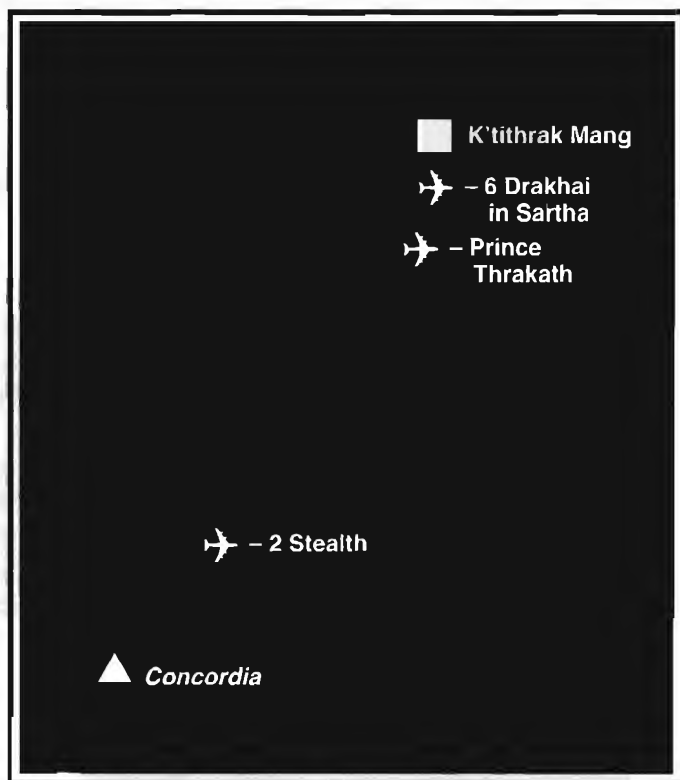
Prince Thrakath swept out from behind the headquarters and attacked, just as I was starting the lock sequence for my torpedo. The battle was similar to the one I'd fought with Jazz, except the Prince never had a chance to eject. I kept my setting on full guns, engaged the ITIS, and waited for perfect position before hitting the fire button. My first passes weren't successful, but after firing a few Spiculums and IRs, I disrupted his strategy enough to bring down the Grikath with an afterburner slide from the left.

I think Spirit, Downtown, Bossman, and all the other pilots who had lost their lives were in the cockpit with me. Even though six Drakhai came after me, they really didn't stand a chance. Every tactic I'd ever learned just came out instinctively. I turned to run, then took out three with the tur-reted neutrons on the rear. The others fell to dumb-fires, particle cannons, and mass drivers.

The destruction of the headquarters was almost anticlimactic, although it was my last torpedo that finally caused the biggest explosion I'd ever seen in space. I was elated by my success, but knew I still had to face Admiral Tolwyn's wrath for disobeying orders.

After I landed on the *Concordia*, I was ordered to the bridge.

Wingman: None
Ship: Sabre



After the Destruction of K'tithrak Mang

I knew I was going to get a load of guff from the Admiral when I returned, and I was right. He told me I'd disobeyed orders, had been derelict in my duty, and was guilty of theft of government property and endangerment of personnel. Then, for the first time in my life, I saw him smile.

"Nice work, Colonel," he said.

"Colonel?" I asked myself, and then I realized that he was going to rectify what had taken place 10 years ago.

"All right," I thought. "With the difference in wages between captain and colonel, I'll be getting a hefty check for ten years of back pay. If this war ever ends, I think I'll take Angel on a vacation. Centauri would be nice. So would Antares. . . ."

The Admiral's words brought me out of my daydream. "I never thought I'd say this, Colonel," he said, "but I'm proud to have served with you."

It was a relief to hear the Admiral say that, but, to be perfectly honest, his opinion really didn't matter much any more. Angel's thoughts were much more important to me.

"Colonel, I'm cutting new orders for you," Angel said with a smile. "You're to report to my quarters immediately ... and make sure you remember the champagne."

After a few days of R & R, I began to think of all the lives in the past 30 years that had been affected by the war. Virtually everyone living on Confederation planets, stations, outposts, and colonies, knew someone involved in the conflict.

I wish I could say the war ended with the destruction of K'tithrak Mang, but nothing could be further from the truth. We had removed a few claws from the Kilrathi, but they still had their fangs. Prince Thrakhath had been rescued, and I knew we would fight again another day.

I had always sought the complete destruction of the Kilrathi Empire, but after meeting Colonel Ralgha, I realized that, so far, this war had been like many others throughout history. It wasn't being fought against the people of Kilrah, it was being fought against the tyranny of their Empire. It wasn't the people of Kilrah who sought to rule the galaxy, it was their rulers.

I hoped that some day we could return Colonel Ralgha to Kilrah and have him lead the reconstruction of their government. I could imagine the day when the talk would no longer be of war with the Kilrathi, but of peace. We could learn a lot from each other, if only we were given the chance.

Meeting a Maniac ... One More Time

It wasn't a month after the last mission, that we jumped into Deneb Sector. With the Admiral's help, I was able to locate the carrier where Maniac had been transferred after his months in sick bay and two years of therapy. I planned on surprising him.

When I reached the carrier, I was told that Maniac was in the bar. The warrant officer gave me a strange look when I said that Maniac and I were friends. I just figured the guy was goofy.

I went up to the bar to order a few mugs of Goddard Special. I thought I'd just walk over to Maniac's table, hand him a beer, have a seat, and wait for his reaction. That's what I did.

"What the hell," he said. "How'd you find me, Prankster?"

I started to explain, when Maniac interrupted.

"I guess you think you're the big hero of the war again, right hot shot? Well, let me tell you something," he said. There was a malicious edge to his tone. "You can't hold a candle to me when it comes to flying. I saved our entire strike fleet in Deneb, with some of the niftiest maneuvers you've ever seen. Ask anybody around here!" he exclaimed. "They'll tell you who the best pilot in the space navy really is!"

"Hold it, Maniac," I replied. "I just came over here to see how you were doing. I figured things had changed. I thought you'd be glad to see me." I noticed that the bar had become very quiet. Everyone was staring.

"Glad to see you!" he yelled. "There's isn't anyone I'd rather avoid. You've tried to knock me down since our first day at the academy. On the *Tiger's Claw*, you talked about me behind my back. I've heard all the stories. I know what really went on. You were just trying to be my friend so that you could learn my secrets. Well, it won't work this time, Prankster. I'm wise to all your tricks. You just wait. By the time this war ends, you'll find out who the real hero is."

I just got up and walked away. "Damn," I thought as I headed back to the launch bay. "I've seen this act before. That guy might have been cleared by the psych staff, but they better keep a sharp eye on him, because he's headed for trouble again. He just can't handle the stress of combat."

When I returned to the *Concordia*, I decided to write Admiral Tolwyn about my concerns. I sent it by regulation e-mail channels to ensure it became an official part of the record. "I've taken enough lives in this war," I thought. "Maybe, in Maniac's case, I can save one."

The Losing Paths

Author's Note

This section is not really a part of my memoirs, but contains information that Wing Commander II game players will want for the successful conclusion of the game.

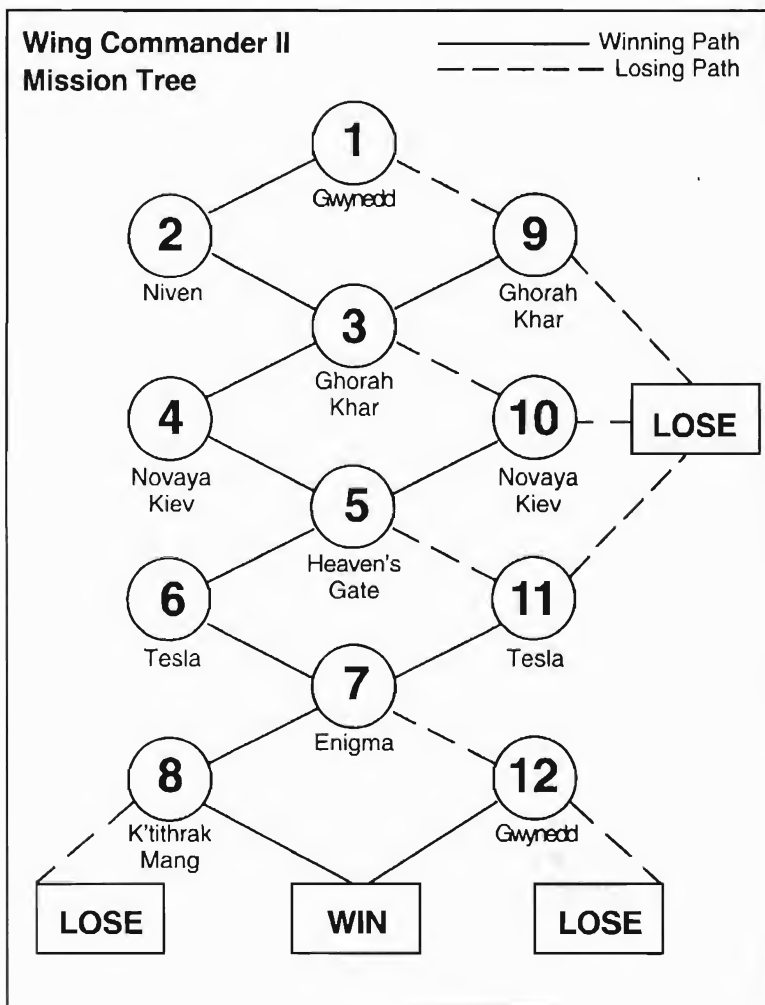
Roberts made every effort at creating an authentic experience for the game player in his holo-vids. He worked hard to ensure that the missions flown in Wing Commander II matched those that I actually flew in the Enigma Sector. The fact remains, however, that we won that confrontation against the Kilrathi. In creating a game, Roberts had to create a way of losing the game as well. It would be pretty boring if players only won the game.

The mission tree pictured below shows the structure of the missions in Wing Commander II. On previous pages, I provided mission profiles that correspond to the chronology of the actual engagements against the Kilrathi. Those 31 missions are represented by series 1 through 8. If

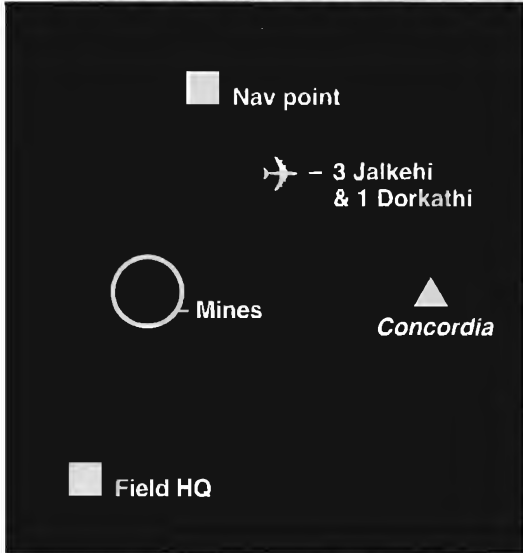
you win each of the eight series, you will follow the path represented by the solid line.

In playing Wing Commander II, individuals who fail to successfully complete the necessary missions in a series may be taken to the losing path. That path is represented by the dotted line. After losing a particular series, it is always possible to return to the winning path, by completing the missions in the next series.

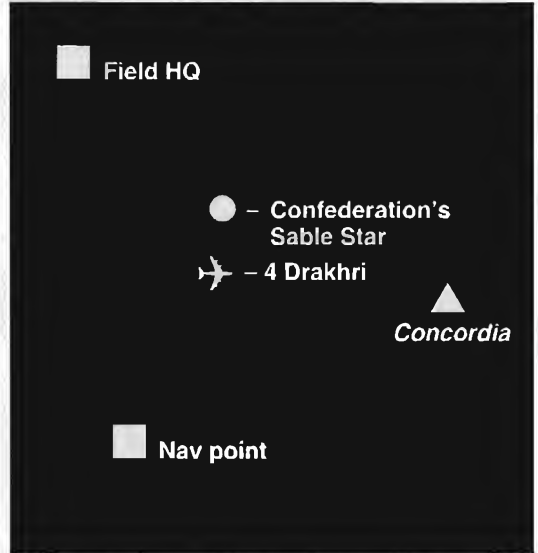
On the following pages, are the mission parameters for each series on the losing paths, numbered 9 through 12. For each mission in those series, I have provided a map that indicates your route and the enemies you will encounter. In addition, I've included the specific actions which must be completed for you to move from the losing path to the winning path.



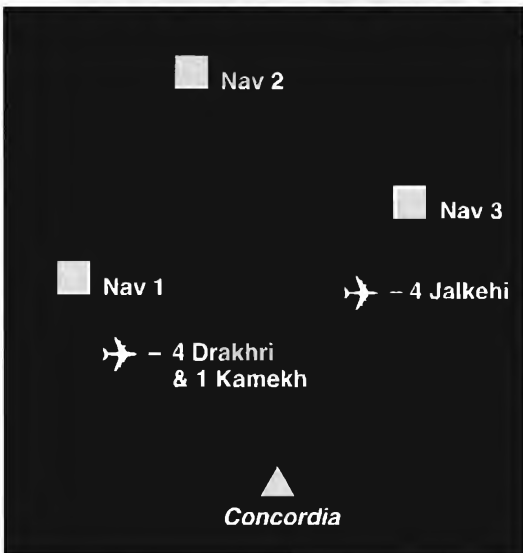
**Ghorah Khar — Series 9 — Mission 1
(Solo Mission in Broadsword)**



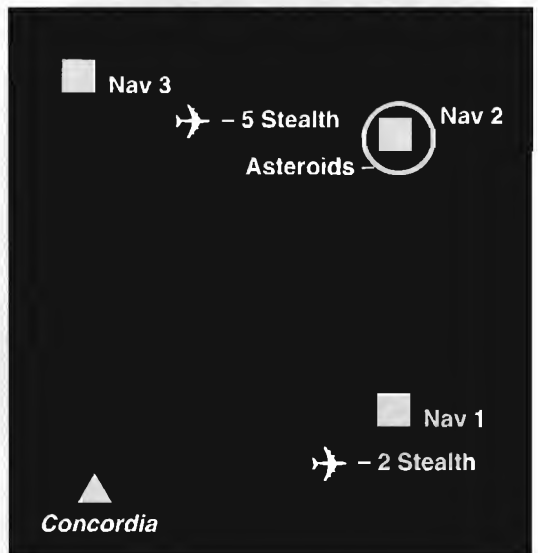
**Ghorah Khar — Series 9 — Mission 2
(Solo Mission in Ferret)**



**Ghorah Khar — Series 9 — Mission 3
(Solo Mission in Broadsword)**

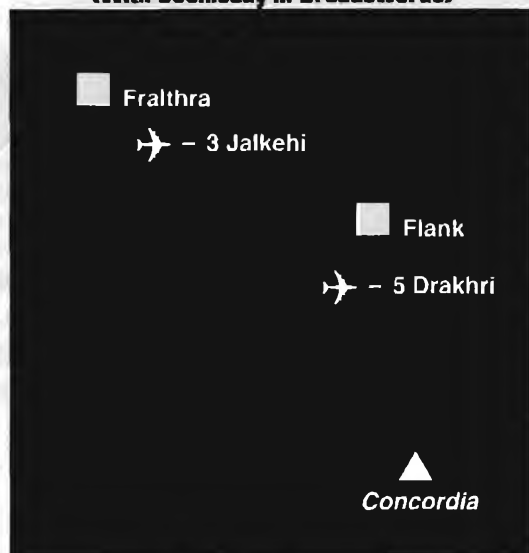


**Ghorah Khar — Series 9 — Mission 4
(Solo Mission in Broadsword)**



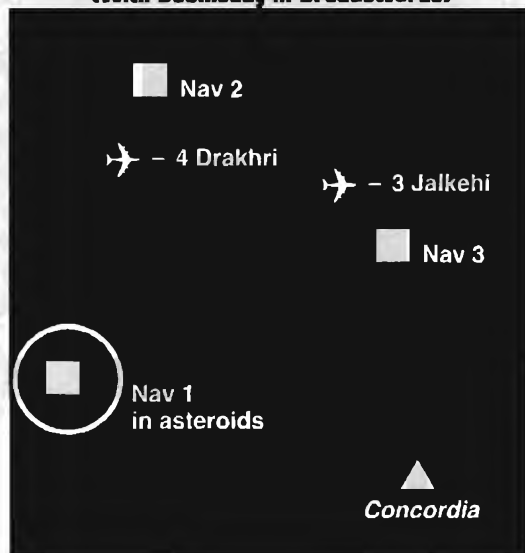
The *William Tell* must survive or you lose the game.

**Novaya Kiev — Series 10 — Mission 1
(With Doomsday in Broadwords)**

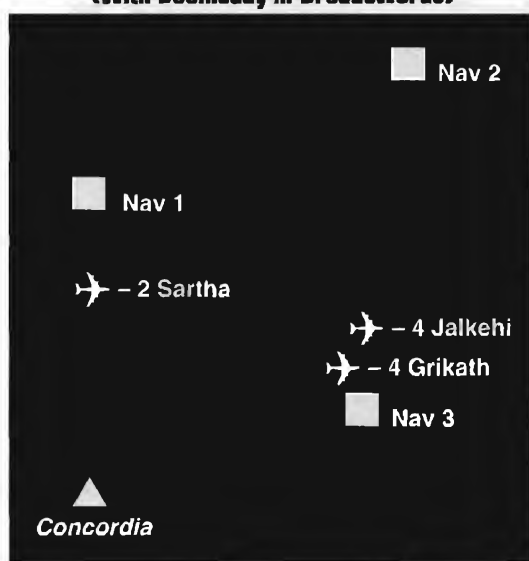


Destroy the Fralthra and complete Mission 4's objectives to reach the winning path.

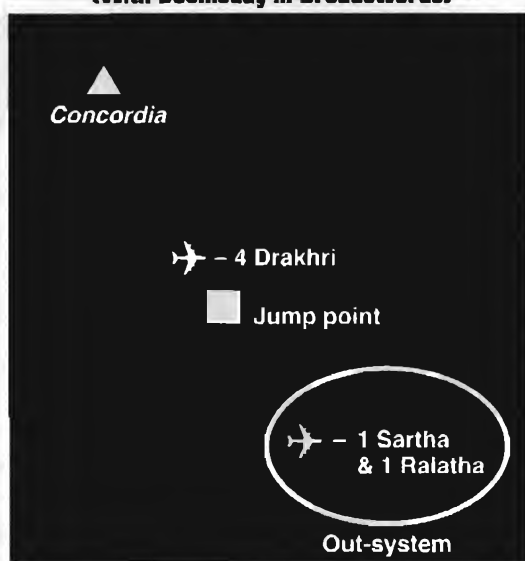
**Novaya Kiev — Series 10 — Mission 2
(With Doomsday in Broadwords)**



**Novaya Kiev — Series 10 — Mission 3
(With Doomsday in Broadwords)**

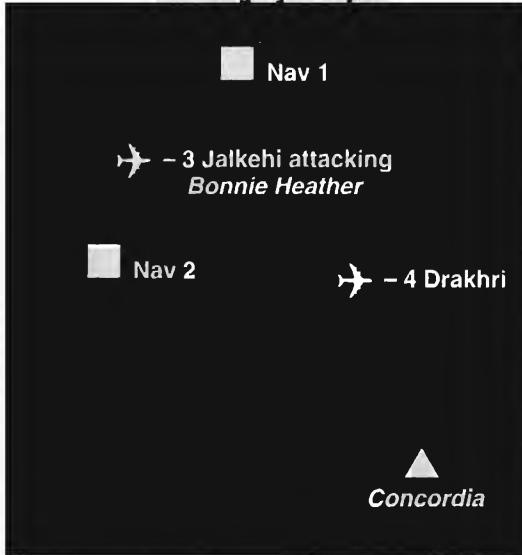


**Novaya Kiev — Series 10 — Mission 4
(With Doomsday in Broadwords)**



Recover the data capsule to reach the win path.

Tesla — Series 11 — Mission 1
(With Stingray in Rapiers)



Tesla — Series 11 — Mission 2
(With Stingray in Rapiers)

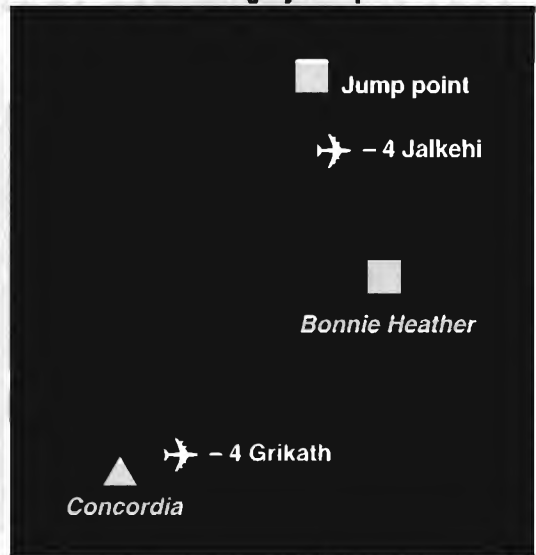


Eliminate both destroyers and survive the rest of the missions in the series to reach the winning path.

Tesla — Series 11 — Mission 3
(With Stingray in Rapiers)



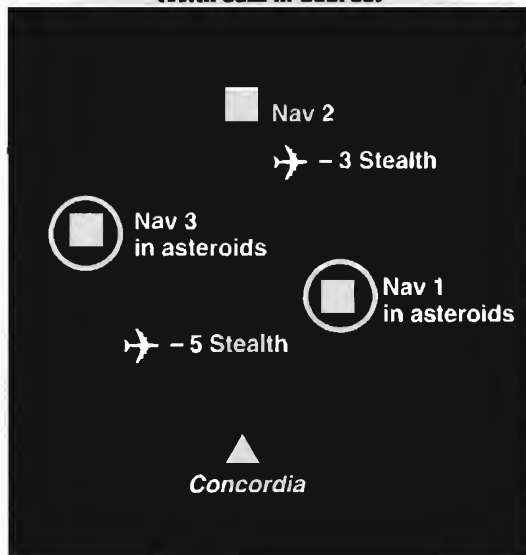
Tesla — Series 11 — Mission 4
(With Stingray in Rapiers)



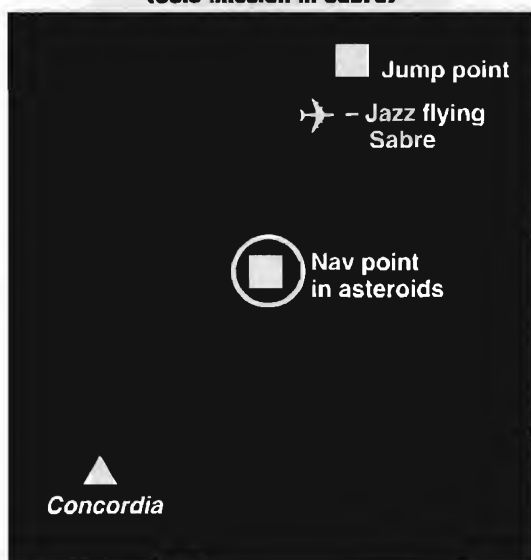
Gwynedd — Series 12 — Mission 1
(With Jazz in Sabres)



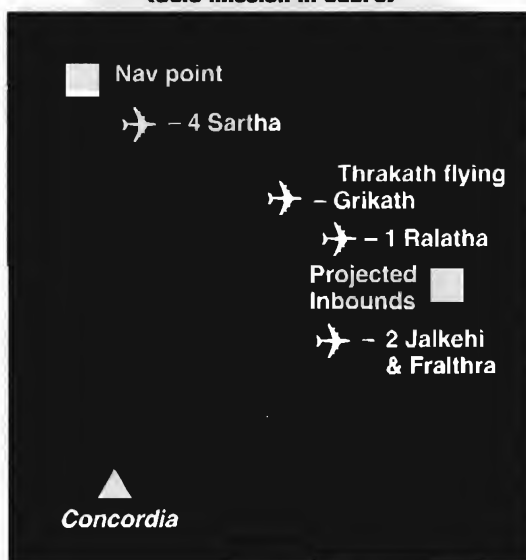
Gwynedd — Series 12 — Mission 2
(With Jazz in Sabres)



Gwynedd — Series 12 — Mission 3
(Solo mission in Sabre)



Gwynedd — Series 12 — Mission 4
(Solo mission in Sabre)



You must destroy Prince Thrakath's ship and all other enemies around him to win the game.

PART II:

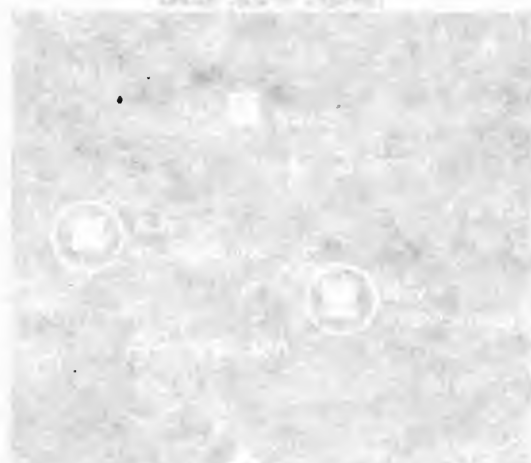
**An Interview with Chris Roberts:
The Creator of the Wing Commander series**

**Software Meets the Movies:
Making Wing Commander I and II**

Daywind — Cycles 17 — Mission 1
(Wave 100 to 10000)

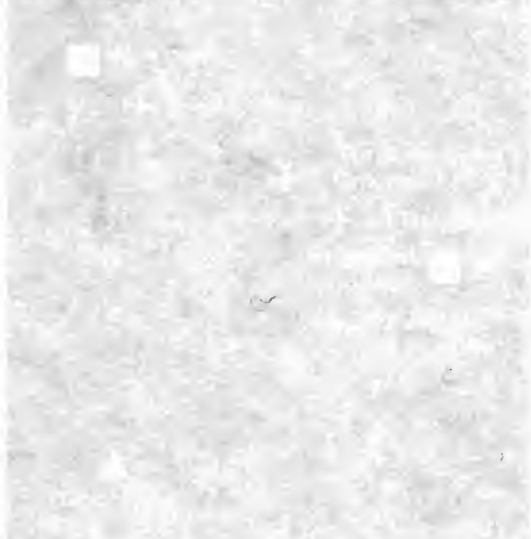


Daywind — Cycles 17 — Mission 1
(Wave 100 to 10000)



In this view, you can see the enemy ships in the upper half of the screen.

Software flies the Movies:
Making Wave Commander 1 and 2



An Interview with Chris Roberts

Although Chris Roberts was born in Redwood City, California on May 27, 1968, he grew up in Manchester, England and his career as an entertainment software designer began there. As a young freelancer, Roberts' game designs rose to the top of the charts in England, but his international reputation skyrocketed with the release of Times of Lore, the first Roberts product published by ORIGIN.

Roberts remained a freelance author until the release of Wing Commander, his first design developed entirely on the MS-DOS platform. At the company's release-day party for the new game, Robert Garriott, ORIGIN's president, announced that Roberts was joining the company as Director of New Technologies. The position ended his stint as a freelancer. At 22 years of age, Roberts had become one of the youngest individuals to hold such a responsible position with a leading company in the industry.

Interviewer: When did you first become interested in producing computer games?

Roberts: I was about 13 years old when a friend of mine purchased a Sinclair ZX-80, one of the most popular computers in Britain at the time. I think it had about 1K of RAM, but you could create blocky shapes and make them move around on the screen. That fascinated me, I thought it was really cool. So we spent all our spare time just playing around with the computer and discovering what it could do.

It didn't take me long to realize that I needed some formal training if I



wanted to learn more about programming. I signed up for an extramural course at the local university. Of course, they were doing all the boring stuff, working on business programs and operating systems, while my friend and I were trying to create arcade-style games. We were interested in the entertainment aspects of computers, and that's how we spent our time.

Interviewer: When did you become involved in producing entertainment software on a commercial basis?

Roberts: Our instructor in our computer course had become the editor of *BBC MicroUser*, the magazine for users of the BBC computer. That computer had become the best-selling machine in Britain, used extensively in schools. A couple of months after the course was completed, I bought a BBC and started fooling around with programming some very simple games in BASIC. In those days, the magazine published listings of games every month, so that readers could type them in and play them on their own computers. They weren't games you could purchase retail.

The instructor remembered us from class and called to ask if my friend and I would be interested in producing some games for the magazine. Well, we jumped at the chance. We received about \$200 for each listing, and that was more money than I'd ever heard of before. It was really neat. I was 13 and being paid to develop games. That was really the start.

Interviewer: What kind of games were they?

Roberts: The first game was called *Kong*. You controlled a King Kong type of character, on top of the Empire State Building. It was pretty simple. You threw rocks at helicopters while they tried to knock you off the top of the building. It progressively became more difficult, with more helicopters flying in and speed increases. The second game was *Popeye*, another arcade-adventure-style game.

Interviewer: What was your first published game and how did you make the transition?

Roberts: After the first two games, I found that writing games in BASIC was unsatisfying. I couldn't create the graphics I wanted and couldn't move them around fast enough. So, with my friends, I started learning to program in machine code. I was still interested in arcade-style games and I was fooling around with doing

translations of the stand-up games I saw in the arcades.

I started my third game about seven months after getting the computer. I was working in machine code on and off during the school year in late '83 and '84 on a game called *Wizadore*. In the game, the player ran around trying to save the kingdom from a big, bad, evil dragon. It was a real jump for me, and for the first time the player could pick up objects, throw spells, jump over walls, and fight dragons and other creatures. *Wizadore*, published in 1985 by Imagine Software, was number one in the BBC *MicroUser* sales charts for about six weeks.

"It didn't take me long to realize that I was writing for a fairly small market. The entire installed base for the BBC was about 400,000."

Interviewer: Where did you go from there?

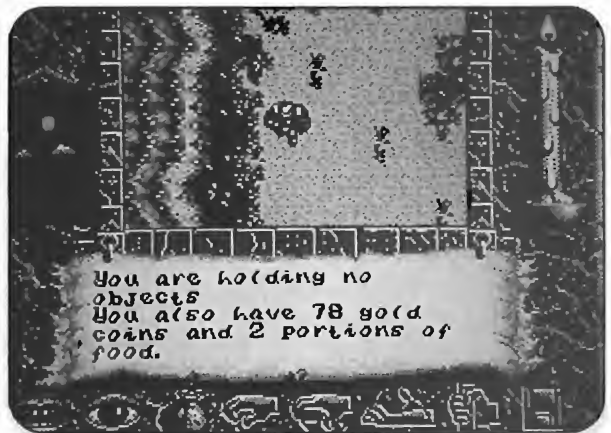
Roberts: I produced a conversion for the Spectrum ZX for Ocean Software and then started writing a game called *Stryker's Run*. It was another arcade adventure, in which you had received secret documents and had to make your way across a war-torn battlefield and deliver the papers to headquarters.

It was the first game I had designed that incorporated scrolling. You could pick up weapons, jump into helicopters and jet planes, set explosives, and blow up obstacles while moving across a large battlefield. The game had the best graphics in the marketplace at the time. In fact, I had some of my artist friends work on it. It was the first time I'd employed artists on a project. In addition, the game was the first to take advantage of the new, upgraded 128K BBC computer.

For the time, it was a huge hit. It sold more than any other title I had developed. Martin Galway, a friend of mine from school, had done the music.

Interviewer: When did you make the move from programming on the BBC and move to a more mainstream computer?

Roberts: It didn't take me long to realize that I was writing for a fairly small market. The entire installed base for the BBC was about 400,000. The Commodore 64 had made great inroads into the entertainment market in Britain and I knew it had a large installed base in other countries as well, so I started working with that machine. I really wanted to go after a larger market.



Times of Lore, Robert's first game published by ORIGIN, received critical acclaim for its graphics and sound.

I began working on a Commodore game I called *Ultra Realm*, later to become *Times of Lore*. It had some technical features that hadn't been included before in a Commodore 64, with split-screen type of things and a rather unique way of handling conversations. It had top-down graphics, a large world, detailed characters, lots of enemies to fight, and a pretty good storyline. I think Martin Galway's music was the best ever done on a Commodore.

Interviewer: You were still in Britain at the time, yet *Times of Lore* was first released in the United State by ORIGIN. How did that come about?

Roberts: It was really a series of coincidences. I'd come to the U.S., to Austin, Texas, to visit my parents. I hadn't finished the game at that point and I realized I could continue working on it in my parents' guest house as easily as I could in England.

I had worked on my own for a few months when I became frustrated by trying to create my own artwork. I decided I needed an artist, but I didn't know anyone in the area. I had started going to a local establishment named HexWorld, owned by Martha and David Ladyman. It was a place where people went to play games. They had all these board games and you paid five bucks to go in and play. I had just entered when I saw this incredible artwork of a gladiator on the wall. It had been done on a Macintosh computer. I asked the owner who had digitized the artwork. He said that it wasn't digitized, but had been drawn by a local artist named Denis Loubet.

I called Denis from the owner's phone. He agreed to meet with me, and an hour later I was sitting at a table and explaining what I was trying to do. Denis agreed to do the graphics for the game. I didn't know it at the time, but Denis was already producing artwork for Richard Garriott, a.k.a. Lord British, for the *Ultima* series. In fact, Denis was hired by ORIGIN as a full-time artist two weeks later.

ORIGIN didn't have much presence in England at the time, and I had never heard of them. Denis was working on my game after his regular working hours, and he



Times of Lore was one of the first games that allowed the player to control as a male or female main character.

showed some of it to Richard Garriott and Dallas Snell. Dallas was the head of product development for the company. They asked me to meet with them.

Well, I started hanging around with the guys at ORIGIN — there were only four or five people working for ORIGIN in Austin at the time — and I was really impressed by the people, their attitudes toward entertainment software, and the atmosphere at the company. It was a high-energy group of people. I was shopping the game around at the time, and had talked to Electronic Arts and Broderbund, but I was so impressed by the ORIGIN group that I signed with them to distribute *Times of Lore*. After my experiences in England, which is like swimming in a big pool of sharks, I felt comfortable dealing with ORIGIN.

Interviewer: How did your career progress after *Times of Lore*? Specifically, where did *Bad Blood* come from?

Roberts: I really intended to pursue *Times of Lore II*. I had worked very hard on an ambitious game design. It was extremely detailed, included many subplots, and took place in an enormous world filled with vampires. At the same time, I had come up with the idea for *Bad Blood* and was beginning some preliminary ideas for a game I was calling *Squadron*.

Since I was still a freelancer at the time, I didn't have the money to pursue every single project. I had to make a cut somewhere, and since I thought *Bad Blood* would be a little easier to complete, I axed *Times of Lore II*. In addition, ORIGIN was looking for a project to fill a specific time slot. We thought *Bad Blood* had the best chance of meeting that time deadline. As it turned out, we probably could have done *Times of Lore II* with the same amount of effort required to complete *Bad Blood*. *Bad Blood* took more resources than initially anticipated.

Interviewer: *Bad Blood* wasn't very successful. To what do you attribute the low sales and some poor reviews?

Roberts: I think it failed largely due to the audience. The game was an arcade adventure that would probably have appealed to a Nintendo market. Unfortunately, I don't



Bad Blood took place following a nuclear holocaust. Evil humans were attempting to destroy the mutant survivors.

"I started thinking that I might want to do a starfighter type of game. After all, it would be more fun flying around in a fighter than moving battleships around the screen."

think that audience exists among the IBM-compatibles owners. At least it didn't at that point in time.

In addition, the marketplace still focused on ORIGIN as the *Ultima* company. People who bought *Times of Lore* thinking it was another fantasy role-playing epic didn't like it because it was an arcade adventure. People who liked arcade-style games didn't buy it because they thought *Bad Blood* would be another fantasy-role-play-style game. It was the worst of both worlds, a combination of factors that contributed to its lack of success.

Interviewer: While completing *Bad Blood*, you were also working on preliminary stages of *Squadron*. How did you arrive at the determination to produce a space game?

Roberts: I never intended to limit myself to one particular segment of the industry. I always try to do the best in whatever genre I'm working in at the time. The idea for a space game grew from the fact that I've always liked space games and movies myself. I loved *Elite*, a space game written for the BBC computer, I've always been a *Star Trek* fan, and when I saw *Gauntlet* in the arcades I really liked it. But I always wanted to do something a little different.

ORIGINally, I was planning on doing a space-conquest game where you take over star systems, move battleships around, and invade planets. It was going to be more strategic than my earlier games. I started researching the subject, buying all the board games and books, watching space movies and television shows. I even started working on some top-down graphics. During the research phase, I found that there really wasn't a lot of information about big-battleship combat. I ended up with a lot of books and other materials on space fighters. As I looked through it, I thought, Wow, this is really neat stuff. I started thinking that I might want to do a starfighter type of game. After all, it would be more fun flying around in a fighter than moving battleships around the screen.

Interviewer: What was it like to make the jump into producing 3D simulations?

Roberts: Once I'd determined that fighter combat was what I wanted to do, I had little choice in the matter. It had to be done using 3D graphics. It just wouldn't work or have much appeal from a top-down view.

I knew I couldn't go head-to-head with MicroProse, Spectrum Holobyte, and other companies that were doing polygon-based 3D graphics. I had too much catching up to do, and I felt that at best I would only match their work, not exceed it. I really wanted to take the next step, and I really wanted it to look and feel like a movie.

I started tinkering with bit maps instead of polygons. Using bit maps, I could build a model, photograph it from different views, and store it as a huge shape file. The advantage was that the program only had to tell you what view to turn on, it didn't have to calculate the images in real time. It also gives you a better image quality, since the bit-mapped images can have more sides and faces. I think the bit maps were what helped give the game its movie-type feel. I'd seen something like it used in *Battlehawks 1942*, a really great game. I took a different route, but in many ways that game showed me the way.

For a while, I was just playing around and trying to develop a method to take advantage of bit-mapped images. The problem was that I had to be able to take an image, look at it from any angle, and scale it at the same time. If I couldn't do that, I would need an astronomical number of images and wouldn't have the room to store it on anyone's computer. It took about two months of 16-hour days to come up with the rotation and scale routines for the bit-mapped images. Those programs have become library tools for ORIGIN and are now being used in *Wing Commander*, *Wing Commander II*, *Ultima VII*, and *Strike Commander*.

One thing I discovered is that 3D is more intimidating from the outside than it is from the inside. Once you figure out what's going on, it's really pretty simple. It seems harder than it is and once you build the 3D system, it's easier to work within than top-down or side-view. From that point on you define the world, its criteria and its physics, and you can do anything in it. You can say 'Let's put the camera over there' and it works. To move an object in space you just give it a velocity vector.

Interviewer: Now you have a 3D system that works, what was the next step?

Roberts: I got the game to the point where you could sit in a cockpit, fly around and shoot at a ship before I really showed it to anyone. This still wasn't a company-sanctioned project, and I was working on my own time although the company provided

"I knew I couldn't go head-to-head with MicroProse, Spectrum Holobyte and other companies that were doing polygon-based 3D graphics."

some art resources. Denis Loubet drew me a cockpit and a few explosions, and Paul Isaac, who has worked with me for a long time, built me a model and helped with some of the programming.

Then I showed it to Fred Schmidt, ORIGIN's general manager, and Dallas Snell, our VP of Product Development. Fred was really excited about the visual impact of the game and the fact that we had a potential product that would take the company into another, large segment of the industry — the folks who like simulations. Dallas liked it visually, but I think his view, and that of many others, was that it looked nice but how would it work as a game. There was still plenty of work to be done, but at this point it did become a sanctioned project, one that ORIGIN was willing to commit some resources to. After the company researched trademarks, we changed the title to *Wing Commander*.

Interviewer: Where do the little touches come from? You demonstrated a very early version for me when I was in Austin doing some marketing work for ORIGIN. It was soon after you'd showed it to Dallas and Fred, and the game already included some of the little touches that make it memorable — the hand moving the joystick, the pilot's head moving. Why were you the first to add that kind of detail?

Roberts: It really comes from wanting to put the player in the game. I don't want you to think you're playing a simulation, I want you to think you're really in that cockpit. When I visualized what it would be like to sit in a cockpit, those are the things I thought of.

I took the approach that I didn't want to sacrifice that reality due to the game dynamics. If you would see wires hanging down after an explosion, then I wanted to include it, even if it would make it harder to figure out how to include all the instruments and readouts. I want what's taking place inside the cockpit to be as real as what I'm trying to show outside it, in space. I'd rather show you damage as if you were there, than just display something like 'damage=20 percent.' That's abstract. I want to see it.

Interviewer: How about all the other touches, the dynamic music score, the character interaction, the script?

Roberts: All those elements were things I'd been wanting to do for a long time, but I'd always been stopped by the technology. Even

when new technology becomes available, as a company we have to be concerned with how many people have upgraded. We're always trying to anticipate those things.

For *Wing Commander*, this was the first game I developed specifically on an IBM or compatible computer. We had 256-color VGA graphics and had made the decision that we could require 640K to run the game. I took full advantage of that.

Specifically, I had brought in Jeff George as a writer for *Bad Blood* and I also used him on this project. He and I hammered out a lot of those aspects of the game. We worked well together, but we weren't positive that all of our ideas would come together until much later when all the pieces were assembled. We jokingly called it the Grand Experiment.

As it turned out, *Wing Commander* was the only game I ever developed where the vision at the beginning matched what was there at the end. I wouldn't change anything about it, and that's very unusual.

Interviewer: When did you realize you had a hit game?

Roberts: There were actually three different times that stand out. All through development we were receiving positive feedback, but when we went to playtest, when we showed the game at CES, and when we checked the bulletin boards after release, those were all significant milestones.

Actually the first indication was when we went to the CES in Chicago in 1990. Up until that time, I was working on most of the game programming by myself. At the show, we had set up a large-screen monitor and stereo speakers, and had the game running on a 386 computer. After the first day, I knew people in the industry had been blown away. Developers and designers from other companies were bringing people over to see the demo. Our sales staff and marketing people were all grins. The booth was mobbed all day long. What made the furor even greater, was that no one really expected it from ORIGIN. We weren't known for simulations. I wasn't known for simulations.

The next point that made me think the game was working was when we went to playtest. When people who play games all the time stop and say 'Wow,' you know you've hit the mark. Then, people around the office, even people working on other projects, were playing the game in their spare time. That added to the confidence I had in the game.

"It didn't try to be the best of a type, it tried to be the biggest and baddest on the block."

At that point, I thought we had a good game from an insider's standpoint, but I didn't know how that would translate into sales. We were still known as an FRP company and I wasn't sure people would purchase a simulation with ORIGIN's name on it. We had made some decisions concerning the installed base of hardware that were a little scary as well.

Marten Davies, ORIGIN's sales manager, did a great job with the rollout, and delivered more advanced sales than I expected. Once the game was released, we kept checking the game forums on the commercial online bulletin boards. When we saw the reaction, I knew it was a bona fide hit. From that point on, it was just a matter of when the honeymoon would stop. It hasn't yet.

Interviewer: I know the game play turned out as planned, but was there anything you wish had been different from a quality standpoint?

Roberts: In hindsight, I wish we had spent more time making sure all the expanded memory features were compatible with all the different machines in the marketplace. But it's almost impossible to test for every different configuration out there. Everything in the game we shipped worked perfectly on our own computers in Austin, but some users weren't able to access all those enhancements — the spectacular explosions and movement in the cockpit — with expanded memory. I understood how they felt. It's happened more than once to me, and it made me mad every time.

Interviewer: In the development of many games, there is a turning point or critical decision that affects the outcome. What was the key to *Wing Commander*?

Roberts: I can't think of a point in time or a specific decision that had that much impact, but the approach we took from the very beginning was vital.

I think developers have always strived to produce the best for whatever machine they're programming for. I was always trying to do the best game on a Commodore 64 without a disk, or an XT with 512K. I used that approach and thought people would appreciate it. But I think people are looking for absolutes. They don't want the best for a PC or an XT, they want the best game, period.

I remember visiting MicroProse Software in 1988, when they showed me a demonstration of *F-19 Stealth Fighter*. It was the best simulation I'd ever seen in my life. At the time, the 386 processor was the hot advance in microcomputing, but it hadn't found its way into many homes yet. When they showed me the program, though, they were running it on a \$14,000, 386/25 computer. I said to myself, Hey, these guys don't play fair.

I think people bought *F-19* because it was the best you could get. If they upgraded their speed or graphics, it would still be the best. That's the approach that made *Wing Commander* successful. It didn't try to be the best of a type, it tried to be the biggest and baddest on the block.

Interviewer: The *Secret Missions* disks have been very successful, but they weren't a part of your original game design. Explain their development.

Roberts: During the development of the original *Wing Commander* game, we had created more ships than were included in the released version. Due to memory and storage limitations, we couldn't make use of all that artwork. The marketing department had decided to release a special, limited edition of the *Wing Commander* game, sold only through direct channels. In the special edition, the box was signed and each purchaser received a *Wing Commander* hat, but they were looking for something more to add to the package.

The product development team decided that we could use the extra ships we had created and produce a disk of additional missions pretty quickly. We felt it would be the perfect addition to the limited edition, and the marketing department agreed. The decision was made before the release of the original, so we added links to the game that would allow users to play the additional set of missions. Later, we decided to make the disks available to everyone, but only through direct sales from ORIGIN.

The actual decision to sell the *Secret Missions* disks at retail was based on many factors. Number one, I pushed very hard. I'm a big believer in making every product available through retail channels. When I make the decision to purchase a product, I want to go to a store and buy it immediately. I don't want to make a phone call and wait for someone to ship it to me. I do it all the time. At ORIGIN, we have software exchange programs with other companies. We ship our new games to them and they ship

their new games to us. But I'm impatient, and if I see a competitor's product that interests me on a retail store's shelves, I go ahead and buy it. I don't like to wait.

I also pushed because *Wing Commander* lent itself to add-on disks. We found that people were really buying into the characters and were interested in following their progress. The *Secret Missions* weren't like scenario disks with extra scenery, they were the continuation of a story.

At the same time, as word spread about our *Secret Missions* disks, our sales department started receiving requests from Distribution to package them and make them available. We determined that there were advantages to ORIGIN and to our customers. For the company, selling them at retail helps us amortize the cost of development. It allows us to spend more on the core game. For the purchasers of *Wing Commander*, it gives them a low-cost method of continuing to play the game, using the same technology, but at a reduced cost.

Interviewer: At this point, you've produced a hit game, the secret missions are completed, and you're committed to producing a sequel. What did you target for improvement, and what makes *Wing Commander II* more than just a huge *Secret Missions* disk?

Roberts: The first thing we wanted to improve was the plot line and the development of the characters. In *Wing Commander I*, we found that people really identified with the characters. On commercial bulletin boards, people talked about the individuals in the game as if they really existed. As we looked at the first game, however, we noticed that the conversations were somewhat clichéd, the relationships one-dimensional, and the characters almost stereotypes.

Wing Commander I was cinematic, but in *Wing Commander II* we really tried to create a movie. We designed a story in which the player is mistakenly branded a traitor, is disgraced, and must then prove himself all over again. It involves much more than just winning or losing a war. We have added an antagonist and a love interest, and the game has more of the plot threads of a movie, and concentrates upon building realistic relationships between the characters. I think it will involve players in the plot more than any other computer game.

The second thing we worked to improve was the structure of the game. In *Wing Commander I*, everything was cyclical. You

went to the bar and talked to characters, moved to the barracks, went to your mission briefing, and then launched into space. *Wing Commander II* is set up so that you go to whatever scene is appropriate to the script. Instead of cycling through the same locations over and over, you'll go to the repair bay, the Admiral's office — whatever the story calls for. There are a lot more sets and locations in the game.

From a graphics standpoint, the image quality is much higher in *Wing Commander II*. Beginning in February 1990, we started generated many of our graphics using new 3D modeling software. The result is that our spaceships now include as many as 120,000 faces, with texture maps and phong shading. The images are as good as you would find in a \$100-million military simulator. They have a photorealistic look.

We've really gone all out in *Wing Commander II*. We worked hard on improving the intelligence of the enemy pilots and ships. We added a camera replay feature to view your last dogfight. You can fly a bomber and move to different turret-gun positions. We have new ships, tractor beams, new weapons, and more interesting missions. The technological kicker in *Wing Commander II* is the addition of speech synthesis. People with Sound Blaster sound boards in their systems can hear the voices of the characters instead of reading the information on the screen.

Interviewer: What comes next?

Roberts: We'll definitely produce a third *Wing Commander* game, since I've always viewed it as a trilogy. *Strike Commander*, due for release this fall or winter, isn't part of the trilogy but will showcase some real breakthroughs in software development and technology.

I'm really looking forward to CD drives making their way into the mass market, because storage is the real limiting factor today. Once we can release software on a CD, the games will really get riveting and we'll be able to match the visual appeal of movies. Of course, we'll have an advantage over movies, because we'll be able to make our player the main character.

The next five to ten years are going to be incredibly interesting and exciting. This is a tremendous industry, one that's changing at a breakneck pace. What really appeals to me is that every day my job is to try and outdo myself and everyone else. It's really challenging... and lots of fun.

Software Meets the Movies: Making *Wing Commander I and II*

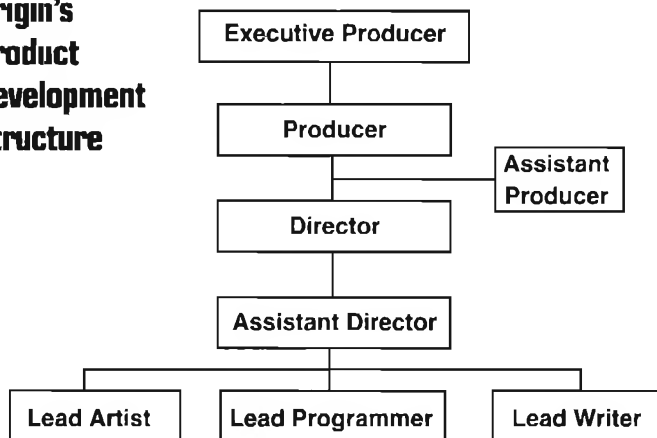
As soon as *Wing Commander* reached the retail shelves, Chris Roberts, the game's designer, started checking the game forums on commercial bulletin boards. He was looking for comments from people who had played his newest game. What he found confirmed his wildest expectations.

"I cried when my wingman died," noted one user. "With the music and graphics, it's like being in the middle of a movie," said another. "It's the first game that's almost as much fun to watch as it is to play," was a third message. That's when Roberts knew he had accomplished his goal — to create a computer game that came as close to an interactive movie as the technology permitted. It was no accident.

Roberts had always been fascinated by science fiction movies and television shows, especially those like *Star Wars*, *Star Trek*, *Battlestar Galactica* and *Return of the Jedi*. He liked the action elements of space combat, the dazzling special effects, and the variety of characters the creators had imagined in future worlds. He wanted to bring those elements to the computer.

Working as a freelance author with Origin, he had stepped into the perfect environment to produce his vision. "The original formula for the structure of our product development organization was to mirror the movie industry," explained Dallas Snell, the company's Vice President of Product Development. "It wasn't a new idea — actually Electronic Arts copied it first — but it made the most sense. Movie and entertainment-software companies are trying to achieve the same result, and we manage similar resources to get that job done."

Origin's Product Development Structure



Roberts Pursues an Idea

In the fall of 1989, Roberts was working on *Bad Blood*, a new product using much of the same technology as in his first Origin release, *Times of Lore*, when he came up with the idea for a 3D space combat game. He discussed his idea with Snell.

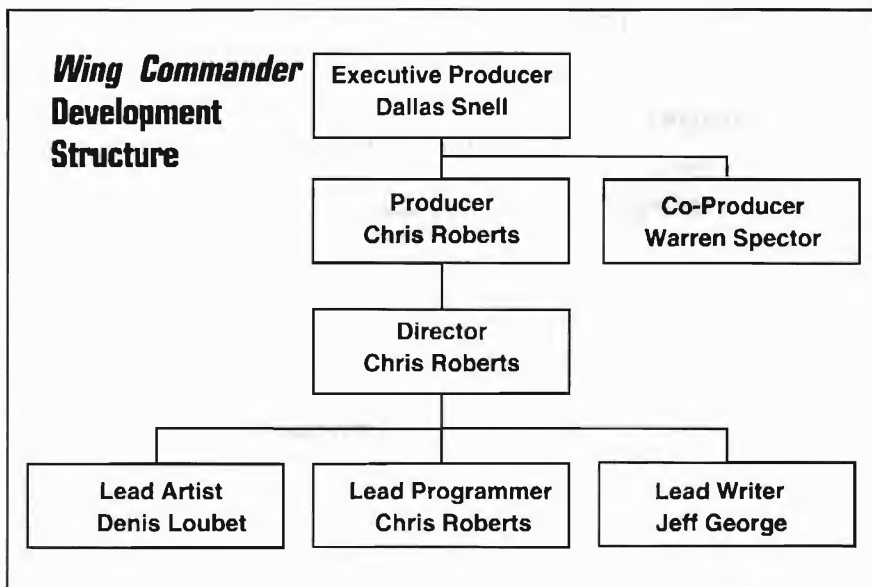
"Chris said he wanted to do a space combat game that was a little more arcadish than simulation-oriented," recalled Snell. "He wanted to work out some new 3D technology to use with the game. Since Chris was a freelance author and wasn't using any resources at the company's expense, I said sure, play around with it and take all the time you want. My feeling was, whatever melts your butter, Chris."

As a freelance author, Roberts didn't have access to all of Origin's resources until he signed a contract for his latest game idea, initially called *Squadron*. He couldn't get a contract until he convinced the company that he would be able to deliver a product that met their exacting standards.

On his own, Roberts jumped into what was for him a new world. He had never worked on any 3D programming before. After a couple of months of 16-hour days, Roberts had developed some routines that allowed him to use bit-mapped images in a 3D simulation. It wasn't a totally new idea — Lucasfilm had used bit-mapped graphics in simulations before — but he brought some new methods to the programming.

"Previous simulations incorporating bit-mapped 3D images relied upon mathematics," Roberts said, "but I used a lot of algorithmic tricks for my rotation and scaling routines. Math is inefficient compared to the way I did it. It was sheer hell for a while, but I ended up with a system that I knew would work."

While the program was still in its



infancy, Roberts had accomplished enough that Snell decided to allocate a single resource to the project. "Chris showed us something that was almost in slow motion because it was written in C language," Snell explained. "We gave him some art time because his idea was beginning to look feasible from a technical standpoint."

Denis Loubet, Origin's first full-time artist, designed a cockpit display, a few basic ships, and some explosions for *Squadron*. Roberts pulled in one of his long-time programming associates, Paul Isaac, to help write the code for the game.

The next time Roberts demonstrated the program, you could fly around in space, shoot a few enemy ships, and watch them explode. The graphics were already spectacular.

"Everything we saw was questionable for some time," noted Snell. "It was all written in C, not optimized in assembly. It looked good, but the speed was barely tolerable unless it was running on a souped-up 386 machine with a math coprocessor. At this point, Richard Garriott and I really liked the idea if Chris could speed up the 3D rotating and scaling. We trusted that Chris would be able to pull off an entertaining product and deliver on the speed, and our decision to go with the project was based on that trust."

After putting together a budget and signing the contract, Roberts was given additional art and programming resources to work with. It was March of 1990 and *Squadron* was finally a sanctioned Origin project.

At this point in time, Roberts had solved the technical aspects of producing 3D images, but he knew it took more than graphics to make a great game. His vision was to create an interactive movie, to emotionally involve the game player using a combination of dynamic music, an intriguing storyline, and interesting characters. He couldn't do it alone, but he knew who could help him bring his idea alive.

Roberts had met Jeff George, a professional writer with a solid background in the paper game industry, almost a year earlier. He had hired George to write the storyline and conversations for *Times of Lore II*, a project that never went into development. Later, still as a freelancer, George wrote and directed *Bad Blood* and helped produce the pitch package, a written document that described the fictional background, for *Squadron*.



Next to Chris Roberts, Paul Isaac produced more of the programming for *Wing Commander I* than anyone else at Origin. He was involved from the spring of 1990 until the product's release in September. He also worked with Roberts on the Apple and Commodore versions of *Times of Lore*, and the IBM version of *Bad Blood*. Isaac, known for his ability to come up with efficient algorithms, is now working on *Strike Commander*.

Refining the Storyline



After working for Steve Jackson Games, Jeff George was employed by Chris Roberts as a freelance artist and writer to help develop the sequel to *Times of Lore*. The game never went into development, but George continued to work for Roberts as the writer and designer of *Bad Blood*. Following that project, he was hired by Origin as their first in-house writer/designer. On *Wing Commander*, George wrote the story and conversations, developed the missions, and worked on the cinematic sequences.

After *Bad Blood* was released, George was hired by Origin as their first in-house writer/designer. He was assigned to *Squadron*. "Chris and I didn't understand the story potential at that point," he recalled. "The best we were hoping to do was to give the player a context for flying the missions. When you're doing a historical simulation, that part is very easy. Since our simulation took place in a fictional world, we were trying to give it enough context that it wouldn't just be another space arcade game. At first, the cinematics were simple mission briefings."

Early in the project, Roberts developed the concept of the cat-like Kilrathi and the use of wingmen. In the first drafts, Roberts had created a vast human empire and introduced situations where the player had to make decisions on ethical issues.

George didn't like the concept of an empire, and pushed Roberts in a more simplistic direction for the story. "In the context of a space opera, empire had a bad connotation that would make people think they were fighting for the bad guys," he said. "The biggest influence I had on the story was to make it a little more black and white, where Chris had envisioned something grittier, with more shades of gray. I didn't want people to worry about moral dilemmas while they were flying missions. It wasn't a game about issues, but one about adventure. That's part of why it worked so well. You knew what you were doing, and you knew why you were doing it. The good guys were really good, the bad guys were really bad."

The Producers

As George and Roberts continued working out the finer details of the scripting and direction of the game in March of 1990, Warren Spector was brought on to produce the project.

Spector had been hired as a producer in the spring of 1989, although his first assignment was to write the conversations for Origin's fall release of *Space Rogue*, a 3D space simulation. He thought his background with Steve Jackson Games and TSR had prepared him for the task.

"I was really surprised by the complexity of the job here," Spector recalled. "At TSR, I managed 20-40 people completing 100 different projects in a year. With all the scheduling, research, and resource juggling, I thought I knew what pressure was. But making computer games is the most complicated business I can imagine. It was an order of magnitude beyond what I expected."

Spector produced *Ultima VI* with Richard Garriott and had

also produced *Bad Blood* in his first year. As those projects wound down, he stepped into the whirlwind of *Squadron*. Development on the game was moving into fast-forward and it was important to control the budgets, the scheduling, and the allocation of company resources.

"When I came in as producer, Chris was really focused on the direction he wanted to take with the game," said Spector. "He knew exactly where he was going and it would have been hard to deflect him from that course. It would have been crazy to even want to, so Chris and I co-produced the game. Where his talent dropped out, mine started, and vice versa. We did a task breakdown, and I ended up updating, adjusting and tracking scheduling, and preparing all the documentation. He handled the creative and qualitative issues. We both juggled the resources."

Producers at Origin are responsible for making sure the final product meets the company's view of a marketable title and that it is completed on schedule and within the assigned budget. Producers work on more than one project at a time. "I was responsible for two, three, or four projects at the same time," recalled Spector. "It seemed like I was in 16 meetings a day. The producers have a tougher time staying focused. From that standpoint, the correlation with movies is pretty accurate."

Even though development was moving into high-gear, the company resources applied to the project in the first few months were surprisingly small. Roberts was directing the project himself. He and Paul Isaac were still the only programmers. Jeff George was tweaking the storyline and developing specific missions for the game. The most extensively used company resource before June 1990 was the art department.

While other artists would join the project later and make significant contributions, Denis Loubet and Glen Johnson took on most of the work in the initial phases. Denis had first worked with the company as a free-lancer, producing the screen graphics and cover artwork for some of the early *Ultima* games. Later, he was hired as the first full-time artist in product development. Johnson, with a background producing black-and-white illustrations in the comics industry, joined Origin in 1988.

The artists play a multi-faceted role in the development of a game. For *Wing Commander*, still called *Squadron* at the time, they wore the hats of set designers, cinematographers, costume de-

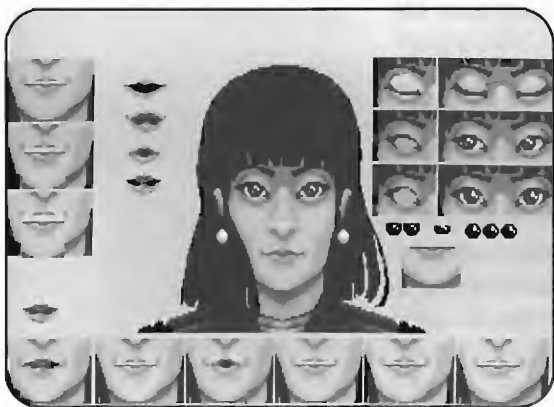


Warren Spector entered the game business in 1983 with Steve Jackson Games. He came to Origin after a stint at TSR where he worked on various role-play games and book projects. He is the author of *The Hollow Earth Affair*, a fast-paced, action-packed, high-tech thriller. Spector joined Origin in 1989. He is the producer of *Bad Blood* and *Martian Dreams* and co-producer of *Wing Commander* and *Ultima VI*.

Adding Artists



Denis Loubet was the first full-time artist employed by Origin. He joined the company after working for Richard Garriott as a freelance artist on the Ultima series. While his computer artwork is found in many Origin games, he also created the paintings for the cover art in the Ultima series and the Worlds of Adventure spin-offs. Loubet produced the cockpit and many of the animated scenes, and sets in Wing Commander.



This screen shot shows the development of the animated mouth positions for one character in the conversation scenes.

signers, technical advisors, and even casting directors. They probably have more different roles than anyone in development.

Denis was the first artist on the project, working on the initial cockpit drawings and producing the first ships and explosions. As development progressed, he added to the inventory of ships that would appear in the game, and designed sets for the mission briefing scenes in the game. "Most of my work was drawn right on the computer," Loubet said. "Chris would give me a basic idea for a scene, then I used our vast reference library and my own imagination to come up with a specific drawing."

The move to developing products on MS-DOS computers had a positive impact on the artists and the work they could produce. "When I started with Origin," Loubet remembered, "we were limited to working with 4 or 16 colors, depending on the computer we were developing for at the time. Most of our work involved creating tiles that were assembled to create the backgrounds in the games. Characters were little people just 16 pixels high. When we started developing for the IBM and compatibles, it was a tremendous change. Suddenly, we had 256 colors and scads of memory to work with. It was great!"

In many ways, Johnson became the casting director when he created the character portraits. "I worked on paper first, producing 11 black-and-white illustrations," he said. "In most games, I would work from a written description of the character's likes, dislikes and personality. In this case, I just came up with the characters out of thin air, although I realized they wanted a mixture of men and women pilots. I assigned a call sign to each portrait." When Roberts and Jeff saw the portraits, they thought eight were perfect. Johnson then rendered them on the computer.

The artists also play the roles of cinematographers, adding their own interpretation to the animated sequences, set designs, and character illustrations. "The producers and directors often think of a scene simplistically," Johnson explained. "They'll think of something from a straightforward viewpoint, while we understand that different angles, backgrounds, and lighting are often more interesting, and can draw the viewer's eye to the most important part of a particular scene."

One of the most riveting scenes in the *Wing Commander* game was of the pilot and wingman racing to the launch bay. Produced using a technique called rotoscope, the production involved everyone, Chris Roberts, Paul Isaac, Jeff George, Glen Johnson and Denis Loubet. The pilots, actually people who worked at Origin, were first videotaped running on a treadmill. The group tried different lighting setups to achieve the effect they were searching for. The images were then digitized, but Roberts didn't want any of the graphics in the game to look like digitized video. Johnson had already designed a background, so he started working with different color combinations to make the pilots stand out. The final version was the result of days of experimentation.

The artists work incredible hours, often bouncing back and forth between two or three releases at the same time. Their screen graphics work is usually completed about two months before release unless major changes are made in the game. Johnson worked much longer, producing last-minute illustrations for the blueprints and game manual as well.

"One of the good things about this company is that we can make suggestions about the artwork and we know that the producers and directors will listen to us," noted Loubet. "It's one of the 'bennies' that make working here rewarding. It's definitely not short hours that make it worthwhile."

Chris Roberts had always wanted to incorporate dynamic music (music that changes with the action on the screen) into one of his game designs, but memory was always a problem. Music can be a memory hog. With the MS-DOS computer used for the development of *Wing Commander* and 640K of RAM to work with, he was finally free to pursue that option.

"The trick to a dynamic score was to figure out a way of creating a smooth transition when the music changed," said Roberts. "You can't just splice different tracks together anywhere or it sounds awkward. What we did was to make the music self-aware, so that every piece of music would check back with the game to see what was taking place and then branch to another piece of music, based on the game information."

Roberts and Warren Spector brainstormed to determine the different pieces of music that were needed for the game. "Some of the pieces, like the launch and briefing music, were easy to figure out," Roberts said. "In space, however, where we ended



*Glen Johnson's background was the comics industry where he produced black-and-white art for Marvel and many other comic companies. Johnson produced the character portraits and animations in *Wing Commander* and all the illustrations in the game's documentation.*

Dynamic Music

up with 20 to 30 different tunes, we broke things down according to what was happening in the game. We needed a segment for when the enemy was on your tail, when you were heavily damaged, when you had destroyed an enemy, and so on. We had to list every possibility." The list was given to George (the Fatman) Sanger, who, along with Dave Govett, composed the music. The individual pieces were short, but in order to work with the Origin FX system, each had its own parameters.

"We told the composers we wanted a big, movie-like, orchestral sound and gave them an idea of style by making references to specific movies," Roberts explained. "Then we indicated which pieces would branch to which other pieces."

The composers would have to make them flow from one to another. "From the composers' standpoint," Roberts explained, "that was the most difficult aspect of the assignment." At some points, the music was almost homogenous so that it could flow in many different directions.

Roberts took Sanger's MIDI files and plugged them into the Origin FX system that made them self-aware. As the game changed during development, the music was edited to match.

Blowing Them Away at Summer CES

In late spring, the bane of product development and marketing was fast approaching. The summer Consumer Electronics Show (CES), scheduled for the first week of June, had been targeted for the introduction of the game to distribution channels and to the media. Actually, *Wing Commander* had originally been scheduled for release right after the show, but it was obvious that it would take much longer to complete the detailed game. For the show, however, Sales and Marketing would need a demo with full music to show on a large-screen monitor, and promotional materials that included the new box art and screen shots.

At almost every software company, the working title of a game under development changes by the time it's released. With the show right around the corner, everyone wanted to nail down a name right away. Trademark searches blew away any possibility of using the name *Squadron*, and after numerous meetings, *Wingleader* was selected.

Everyone in the company understood the importance of trade shows, but few were thrilled by the prospect of producing the items that make them successful. For the creative services department, the CES show meant that the box art had to be

completed three months before the release of the game. They sure didn't want to incur the costs or the time involved in repeating the task a few months later. For the art department, the show required quality graphics for the demo that would, in all likelihood, never be used in the shipped version of the game. From a sound and music standpoint, the demo demanded editing work for narration, and transitional music that wouldn't match what was created for the final version. For the producer and director, it meant pulling resources away from the actual completion of the game to develop the self-running computer demo... a scheduling nightmare. For Chris Roberts, it meant a solid week of 18- to 20-hour days to finish the programming and assembly.

Needless to say, the CES show was a resounding success for Origin. The *Wingleader* demo surprised people in every corner of the industry who had thought of the company as the mecca of fantasy and role-playing software. It seemed to many that this action-adventure simulation had come right out of left field. Actually, it was a blast from home plate that the left-fielder never had a chance to reach. It was a monumental home run.

To Marten Davies, Vice President of Sales, the show was an unqualified success and produced the tool he needed to keep excitement at a fever pitch. "I kicked hard to have a demo completed for the show," he said. "It was just a gut reaction, but I knew I needed to flood the retail and distribution channels with the demo. Before the release of the game, I wanted the excitement to grow so that the confidence level would be extremely high. If we could get consumers beating a path in and out of the door, asking whether the game was out, distribution would respond."

While the demo disks produced for the trade show gave people the impression that *Wingleader* was a game, it was actually just a naked, arcadish simulation at that point in development. For the show, Chris had the playtesters fly around while he recorded it. Then he had the artists work on some special graphics while he coded the flying sequences in the demo. George wrote the text and picked out the order of the shots and Roberts fine-tuned it for the show. Now it was time to turn it into a game.

A high excitement level wasn't the only result of the trade show. In meetings with distributors, Origin had promised a September release of the game. The date was based on estimates from product development, but the deadline was now etched in stone and Chris, Jeff, Warren, and the rest of the team had to deliver.

From Wingleader to Wing Commander

A surprise awaited everyone at the end of the show. While the initial trademark search had cleared *Wingleader*, there were enough similar names of early software titles, MicroProse's *Wingman* among them, that the company yielded to its second choice, which had come through the search unscathed. *Wingleader* became *Wing Commander*, and with that final selection and the September deadline, the intensity moved to warp speed.

"I think it's possible to plan the process precisely enough that all the pieces come together throughout development," Spector said, "but this was our first experience with this type of game. In *Wing Commander* all the small pieces came together at the end."

Working with a sophisticated scheduling system, Spector and Roberts had anticipated the hundreds of tasks needed to complete the game. As the game evolved and new features, scenes, and subplots were added, however, the schedule was constantly altered and additional resources were needed — art time, programming, cinematics. Spector was scrambling to keep track of all the new tasks and find the people to complete them.

Before the show, the basic team consisted of Roberts and Isaac as programmers, George as the writer, Loubet and Johnson as artists, and Spector as producer. In the final months, the team grew to include six software engineers, five artists, ten playtesters, two musicians, and various others who filled temporary roles as writers and editors.

The Cinematics Come Alive

June, 1990 was the month when cinematics burst onto the scene. Cinematics are the bar, barracks, funeral, briefing, debriefing, and office scenes, and the midgame sequences that update the player on the course of the war against the Kilrathi. They're the sections of the game that tell the story, set up the missions, and deliver the character interaction. With cuts, pans, trucks, and zooms, they are the movie-like portions of *Wing Commander*.

Since cinematics had never been such a large portion of an Origin game before, the team really had no idea of how long it would take to complete them. As it turned out, it was a tedious process and, without a scripting language or any pre-programmed utilities, it took more than two months.

Since he was writing all the text and conversations for *Wing Commander*, much of the detail work in the cinematics fell to Jeff George. "Most users would never realize the amount of work that went into creating those scenes," he said. "In spoken parts

for instance, for every line of text on the screen, it took four or five lines of code to define who was speaking, what the background would be, and the accompanying eye, head, and lip movements. I'm not a programmer, but I was writing C [language] compatible data code. It was really tedious."

While many users haven't noticed it, whenever the characters

speak in *Wing Commander*, their lips move to form the words displayed on the screen. It was accomplished in much the same way that Warner Brothers or Disney would do it, using techniques similar to those in cell animation.

After some research, Chris, Glen, and Jeff discovered that it takes 10 different mouth positions to form all the sounds in the alphabet. Glen Johnson created computer drawings of the 10 mouth positions and 10 more of different eye positions. Pretty much sticking to one frame per mouth position to animate the speech, George started entering the information by hand. At that juncture, there were no automated techniques.

"I would type in a line of text, translate that to phonetics, and then add the appropriate letter to call out a specific mouth position," George explained. "I got to the point where I was pretty proficient at it, but it was taking a long time to do all the speech in the game. We pulled in Steve Cantrell, Phil Brogden, and Warren to finish all the conversations. At one point, Dallas Snell even pitched in on the editing."

People around Origin really liked the cinematic scenes for the game, but Roberts and George weren't quite sure how consumers would react to the combination of cinematics and action. "We were concerned that simulation buyers would be turned off by all the story scenes, and that role-play gamers would be turned off by all the hand-eye coordination required by the action sequences," George said.

CODING CONVERSATIONS

Text as displayed on screen:

"What do you mean, sir? The Fralthi got away ... we didn't even scare her."

After the text was translated to phonetics, these letters were added to call out the mouth positions for the speaking character. The numbers are for timing.

"waduyamen3sar5tefraltegatawa3wedantefanskarar"

These instructions called out head and eye positions. The numbers are timing instructions.

**COCKED(25) REPEAT BLINK(2) AHEAD(45) BLINK(1)
AHEAD(35),**

Dogfight Choreography and Intelligence

July was a significant month in the development of *Wing Commander*. With another product, *Savage Empire*, due for release just a month after *Wing Commander*, resources were becoming really tight, especially in the programming area.

Ken Demarest, a programmer who had contacted Origin because he wanted to be lead programmer on *Ultima VII*, made his first appearance in Austin at Richard Garriott's July 4th party. He joined the company knowing he would first work on *Wing Commander*, but he didn't know what he was jumping into. On his first day at work, Dallas Snell called the team into his office. "He gravely told everyone on the team that they would have to start working 55-hour weeks to finish the job," Demarest recalled. "I had already seen it would take at least that, but since I was new to the area and didn't know anyone, it was perfect for me."

At about the same time, through some back-room bartering, Stephen Beeman was borrowed from the *Savage Empire* team where he was the lead programmer and editor. He was needed to help out with the dogfight sequences. "As I remember it," Beeman said, "the deal was that I would help Chris out on *Wing Commander* if he let me have some of Ken Demarest's time for *Savage Empire*. That sort of give-and-take happens all the time."

First Beeman laid out a basic scheme for the way the dogfight intelligence would work and added some fundamental principles. He called his part of the project dogfight choreography. "I designed the scheme so that the ships would look neat as opposed to being real effective in combat. When you play, you'll notice that when enemy ships are close and you can see them from the cockpit, they move around, zigzag, wobble, and look really good. When you can't really see the ships, all they do is fly in a straight line and try to get on your tail."

Beeman didn't spend a long time working on *Wing Commander*, and his contributions weren't all as visible as the dogfight choreography. "Chris had this huge mass of individual routines to fire this gun or that gun," Beeman said. "I collated those into a single fire-guns routine. I also took Chris's hard-coded stuff for the ship intelligence and turned it into a system."

In a sort of baptism by fire, Demarest jumped into the project and in his first weeks designed the save and load game routines in the mission barracks. "I even made the water drip into the bucket in the barracks," Demarest explained. "The amount of detail in that was pretty amazing." Then he worked on a way of

ensuring that the wingman's recorded kills on the chalkboard in the bar would increase at a rate approaching that of the player's.

Demarest's greatest contribution to the game play was the programming of the dogfight intelligence. "The routines were not true artificial intelligence," he said. "The ships do learn, but only within very limited parameters. For the most part it was scripted and the ships would always react in a certain way if they found themselves in specific situations. For example, if you fire a missile at an enemy ship from behind, once the ship realizes that, it will go into the missile tailing routine, blasting forward, turning a quick arc, then cutting the engines."

Demarest created nine general classes of situations for the intelligence — enemy near, enemy slow, enemy far, enemy tailing, head-to-head, on enemy tail, missile coming, laser hit, and enemy destroyed. For each of those situations, each class of ship and each pilot had different reactions. Then, within that subset, the pilot's skill level was taken into consideration. Some pilots always performed a specific maneuver in a certain situation, while others might do one of a few different things.

"At one point, we had developed a suicide routine, where enemy pilots would just ram your ship if specific conditions were met," Demarest said. "We had to remove it because there was really no defense and it took some of the fun out of the game."

Jeff George characterized Demarest's contribution to the product when he said, "Other than Chris Roberts, who was the key man, Ken Demarest had more to do with the fact that the game came out than anyone else involved." Once the intelligence had been tweaked, Demarest created the asteroid fields, designed the user interface, and produced the navigation map. "The asteroids were really fun to program," he said, "although we worked weeks on avoiding collisions. One hint when flying through asteroids is to avoid looking at one of your own ships as you make your way through the rocks. If you aren't looking at it when an asteroid strikes, it's as if it never happened."

Some of the final work for Demarest, before the debugging process started in the last two weeks before release, was what he called the "nasty cockpit stuff." He produced the target sighting, the readouts, the shield displays and all the red, yellow, blue, and gray dots that appeared on the radar screen. His philosophy of programming is a simple one. "There's always an algorithm if you have the time to do it," he said.



Ken Demarest talked his father into buying him a TRS-80 model 1 with 4K of RAM when he was in seventh grade. He became a prolific, but unpublished, programmer of games in high school. He attended the University of Vermont and, following graduation, started his own computer company providing consulting services to small businesses. After playing Ultima VI, he wrote to Origin and said he wanted to work on Ultima VII. Impressed by the sophisticated algorithms in his games, Origin hired Demarest as a programmer. He wrote the ship's intelligence, produced the navigation maps, wrote the save/load routines and the intelligence for the asteroid and mine fields in Wing Commander. Then he started working on Ultima VII.

Quality Assurance

The Quality Assurance (QA) department, which includes playtesting, had started looking at *Wing Commander* very early in development. Steve Cantrell headed the department.

"Quality assurance starts when the programmers don't have the time to test what they are doing," he said. "We're involved from the first weeks through completion, although in the beginning stages QA operates primarily as a testing service, making suggestions on playability and entertainment value. A good playtester is not only adept at playing games, but also has a good sense of what is fun." In that sense, the playtesters are often the editors, suggesting changes in the pacing and difficulty of the game. It wasn't always that way.

"In the old days, when Origin was primarily a company that published games by freelancers," Cantrell explained, "the authors had big egos and didn't really care for suggestions from the playtesters. Even though Roberts was a freelancer during *Wing Commander*, in the current climate at the company, everyone listens to what we have to say. They realize we're providing valuable input."

While testing for fun and playability is an important role, QA involves much more. The department is responsible for making sure programs run on an incredible variety of hardware configurations using different graphics modes, processors, sound boards, joysticks, and mice. For almost every hardware set up, they have to check whether installed memory-manager, operating-system or cache software affects the installation, loading, and play of the game. They look at every disk format, with hard drives, 3.5" and 5.25" disks, high-density, and low-density each requiring a separate testing procedure. Their job only begins with the actual game, since the technical accuracy of packaging, labels, reference cards, installation guides, manuals, and any other materials in the game is within QA's sphere of responsibility.

In software development, progress can be measured by the version type of the game. When a product becomes an alpha version, it's in a very basic form. It can be booted, loaded, and played, but not all its features have been installed. In August, when *Wing Commander* was in alpha versions, the playtesters were checking out specific routines and technical aspects of the game. They were working a fairly normal schedule, but only for the time being.



*Steve Cantrell managed the Quality Assurance department during the development of *Wing Commander*.*

The software is only part of what is needed from the product development team, since they also have to tell the end user how to play the game. As co-producer, Warren Spector had been charged with having the manual created for *Wing Commander*. "Some day, we'll get to the point where you finish the game, and then start on the documentation," he said. "Unfortunately, that isn't yet the procedure."

Spector hired Aaron Allston to write the manual. "He's one of the best in the business," he said. "Aaron always meets schedules and deadlines, but he had never played the game when he started writing the documentation for *Wing Commander*." Allston came up with the idea of producing the manual in the form of a magazine produced by personnel on the *Tiger's Claw*, the space carrier used as the main base of operations.

"It was an interesting exercise in frustration," Spector said, "because Allston was depending on me to provide the information on ships, characters, tactics, enemy pilots, and the user interface. Here I was going to programmers who were already working 60 to 70 hours a week on the game and asking for all these printouts. I ended up bolting people to their chairs in order to get the information. I couldn't really determine everything at that point in development, so, in some cases, specifically for the tactics information, we made some of it up and then retrofitted it and adjusted the code in the game to make it work."

As it turned out, Allston created the fictional portions of the manual, while Steve Cantrell was later engaged to write the actual game-play portions of the docs. Some of Allston's ideas and writing, specifically a comic-strip style section, were discarded at the last minute due to space and resource limitations.

"Programmers are the eternal optimists when they want to add a feature and the eternal pessimists when they don't want to add something to a game," Dallas Snell noted. It seemed that adding features was the norm in *Wing Commander* and, in August, schedules started to slide because of it. Snell was concerned about the project being able to meet the September deadline for shipping.

"In the last month and a half, I came in and took over the producer's job," he said. "It might not have been necessary — in Chris's mind it wasn't — but I had to do it to make sure the project met the schedule. From a company standpoint, it was absolutely vital."

Documentation

Meeting Schedules



Dallas Snell started out as a game designer and programmer in the early 80s. His first published game, The Quest, was released in 1983. After a couple of years working at SoftDisk, a disk based magazine, Snell was employed by Origin in 1985 to direct product development in Austin. Now the vice president of PD, Snell is the executive producer of every game published by Origin, and describes himself as the company's "only check to balance the system of pure creativity running amok."

The Pressure's On

Snell said that the co-producer format was one of the problems. It was one of Spector's first producing assignments for the company, but, since he was co-producing with Roberts, he didn't really have the power to manage the entire process and call the shots necessary to bring the game in on time. In addition, Snell added, Roberts is almost impossible to manage. With his creative flair, he's the eternal optimist and wants to include every enhancement he thinks of. It's difficult to stop him from pursuing a new course of action, once he's decided to add something to one of his games.

As producer, Snell took a close look at the project, and cut off any new features or enhancements that affected the schedule. It wasn't a popular move, but he understood the company's priorities, and what was required to make them happen.

It wasn't with any malice that Snell took that course of action. "The individuals in Product Development are an extremely passionate group of people, and I love that," he said. "Everyone is here because, for the most part, they love what they're doing. This is what they want to do with their lives, and they're very intense about it and very sensitive to your messing around with what they're trying to accomplish. They don't live for getting it done on time or having it make money. They live to see this effect or that effect, their visions, accomplished."

Snell added, "It's always a continual antagonistic relationship between the executive producer and the development teams. I'm always called the ice man, the ogre, or something. It's not fun, but it gets the products done and out. I guess that's why I have the room with the view," he added with a smile. "Anyway, at the end of the project, all of product development asked me not to get that involved again."

When September rolled around, game development reached the point where they had a first beta version that included all the features. The game was considered complete at this point; no new features or enhancements would be added.

To ensure shipping of the game at the end of the month, scheduling in the final few weeks extended its reach beyond that of the Product Development team. Jeff Hillhouse, head of Quality Control, was working to schedule disk duplication and the actual assembly of the product at the fulfillment house. Creative Services and Marketing were scheduling the layout and printing of

the manuals, reference cards, labels, installation guides, warranty cards, and blueprints. Sales was working to manage the release, confirming final sales figures and shipping information. Everything had to come together perfectly to meet the shipping deadline, and every other department was relying on Product Development to deliver. Talk about pressure.

The brunt of the September workload fell on Quality Assurance, which was doing the final testing of the game; the programmers, who would have to fix the bugs the playtesters found; and the co-producer, who was responsible for all the documentation. The artists were finished, except for some last minute black-and-white illustrations that Johnson was working on; the scripting and storyline were complete, and most of the directorial duties had been finished when the game was still in its alpha version.

Quality Assurance had undergone a drastic change following the release of *Ultima VI* in the spring of 1990. New procedures, much more checklist-oriented, had been instituted to make sure the testing teams didn't overlook anything in the confusing last weeks of a release.

One aspect of quality assurance never seems to change. "Typically," Cantrell noted, "management sets a date for release based on early development estimates, and makes promises to our distributors and retailers. The problem we've encountered is that as programming, writing, and art go over the budgeted timelines, playtesting's time isn't increased accordingly. On *Wing Commander*, our work weeks stretched to 70 and 80 hours, and we worked seven days a week. Even then, it was really close and we almost didn't get done in time to meet the release deadline." Looking at what had to be accomplished, it's surprising that they were able to complete their tasks.

"In the last few weeks," Cantrell said, "playtesting is beyond the stage where they're just playing around to make sure the game works. We're going through checklist after checklist to verify that specific features work on specific machine configurations. Does the Rapier's eject light work? Does the left VDU change from weapons display to damage display when you press the correct key? Does a game load properly?"

It's impossible to re-create all the forms used by QA, but information, taken directly from their hardware and software checklists provides a glimpse of the complexity of their work.

Final Moments

The following information was found on Origin's hardware checklist for *Wing Commander* and had to be verified as working perfectly before release of the game. Note that this information had to be tested with VGA, EGA, and Tandy graphics systems, for every disk version of the game (3.5" low- and high-density, 5.25" low- and high-density) and with or without a hard drive.

**Hardware
Checklist**

1. Installation Program
2. Start Game
3. Save Game
4. Replace Game
5. Load Game
6. Keyboard Interface
7. MS Mouse Interface
8. Joystick Interface
9. Roland MT-32 Sound
10. Ad Lib Sound
11. CMS Sound Blaster Sound
12. EMS - Memory Manager
13. QEMM Memory Manager
14. EMM (286 processor) - Memory Manager
15. EMM 386 - Memory Manager
16. Windows 3.0
17. 286 Processor
18. Smartdrive (cache)
19. 12-MHz System
20. 16-MHz System
21. 20-MHz System
22. 25-MHz System

Luckily for the QA department, the company had decided to release just one disk format first, the 5.25" high-density version. It saved a lot of time. "Even with our checklist," Cantrell noted, "it was impossible to check every possible hardware combination. We borrowed machines from people's desks and ended up with two or three 386s, two 286s and two Tandys. We kept swapping hardware around to cover as many set ups as possible. Even then, just checking the install program on a slow processor without a hard drive could take a full day."

The hardware checklist was just a short story when compared with the different features that had to be checked on the software side. Origin's software features checklist for *Wing Commander* was 10 pages long. On the next page is a brief rundown of what was included.

Software Features Checklist

1. Introduction/Title Sequence - check the credits, music, graphics, bypass interrupt, music toggle, player's name and call sign, and the Origin logo and copyright notice.
2. Wingman Information and Animation - check each pilot's name, rank and animation.
3. Rec Room Animations and Text - check the conversations and animations in the bar for all 40 missions.
4. Trainsims - check the operation of the trainsim in the bar selecting the Salthi, Dralhti, Krant, and Gratha.
5. Barracks - check the return to the bar, exit to DOS, mission hangar, save, load, and replace campaigns.
6. Briefings - Animation and Text - test all mission briefings.
7. Debriefing - Animation and Text - test all 40 missions.
8. Campaign Progress Screens - check animation, text, and timing for progress screens on winning and losing paths.
9. Music - check that the correct music plays in eight different game locations including dogfights, flying, ejection sequences, debriefing, commander's office, bar, barracks, and briefing. 25 subsets of the above need verification.
10. Ships - check 26 different things on each type of ship including each view change, radar, speed indicators, autopilot, manual eject, death screen, etc.
11. Communications - text communications with each wingman and Kilrathi ace.
12. Ship Shapes - test the ship shapes and targeting graphics for every enemy and Terran ship in the game.
13. Misc. Shapes - test the shapes of ten different items including mines, asteroids, debris, explosions, etc.
14. Sound System.
15. Medal Ceremony.
16. Funeral Sequences for player and wingmen.
17. Endgame sequences.
18. Commander's Office - text and graphics.
19. Installation Program.

As Quality Assurance checks out a version of the game, the playtesters enter whatever "bugs" they find on the active bug report form. The report can become very large, since the playtesters aren't concerned with the severity of the problem. If it doesn't look right, read well, or play correctly, they'll add it to the bug list, providing a category heading that indicates whether it's a graphics, plot, text, interface, crash, or other problem. In addition, they indicate the status of the bug, telling whether it's a new one in the current version, an unfixed problem from a previous version, or one that was on a previous version but wasn't checked.

"You would be surprised at how many things that we consider bugs end up in a game," said Cantrell. "For example, if the cockpit has a red line in the left-hand corner, as far as we're concerned, that's a bug. Whether it's fixed or not is often based on how close we are to the release of the game, although we would never intentionally release a game with a severe problem."

It isn't unusual for the active list to include a couple hundred bugs in an early version. In fact, one week before the release of *Wing Commander*, more than 100 bugs were listed. Fortunately, the bugs were in the data files, where changes are easily made. Some bugs, especially those found in the hard-coded section of the game (the hard-coded section is actually a part of the executable file) can create new bugs when the programmers alter the code to fix them. When hard-coded problems are fixed, Quality Assurance must begin the testing procedure over again from the beginning. When only data files are affected, the department can simply check that the bug has been fixed in the next version.

The following are samples from the active bug list in an early beta version of *Wing Commander*.

1. Category: Text – I successfully escorted both Drayman, but in the debriefing it said that I only escorted one.
2. Category: Graphics – The Krant at Nav 2 are invisible.
3. Category: Other – The install program doesn't install midgame files (4, 5) and doesn't unpack them correctly.
4. Category: Graphics – The Ralari doesn't appear in the ship auto-targeting on the right VDU.
5. Category: Plot – The Tiger's Claw is missing when I return.
6. Category: Graphics – The Nav map has "mines" without any circles around them.

Chris Roberts and Ken Demarest were the two individuals most affected by the active bug lists. They were working 18 to 20 hours a day, often catching just a few hours' sleep on the couches in the lounge before starting on the next round. They were beat. "The last two weeks were mainly spent fixing all the bugs, large and small, and squeezing in a few final details," said Demarest. "Don't tell Dallas, but we managed to fit in the battle view (where the camera picks up all the action) and the sequence where, on the losing path, you float in space after the *Tiger's Claw* has been destroyed."

In the meantime, Warren Spector and Steve Cantrell were trying to figure out the final information for the reference cards, installation guide, and box labels. Creative Services had already sent the main game-play manual and blueprints to the printer, both two-color print jobs that required extra time. The installation guide and labels were the toughest to complete on time. "It was real scary," said Spector. "I was trying to get box labels out that showed how much RAM and disk space were required and what sound boards are supported. Steve Cantrell was writing a first-mission tutorial, and we were both trying to figure out exactly how to explain the expanded-memory information to the buyers. The problem was that all those things were question marks up until the last minute. We just didn't have the answers."

The final master disks had been sent to the duplicators when the drop-dead date hit for the completion of the installation guide. Nothing could be worse than missing a shipping date because one piece of documentation was missing from the package. Creative Services had put off the printing of the guide until the last possible second. The fulfillment house would begin assembling the package contents in just three days, and the final layout had to be sent to the printer by overnight mail. Luckily, the carrier's office at the airport could take a package as late as 10 p.m. that night and still meet delivery the following day.

Starting at about 5 p.m. that evening, Creative Services took the rough draft of the installation guide and began the layout. Cantrell was down in the playtesting lab attempting to verify install procedures, the memory manager options, and the final version of the mission tutorial. Taking his cues from Cantrell, Spector started making corrections in the copy. As soon as he finished, he ran upstairs and gave the corrections to the Macintosh operator. Of course, the page count was longer than accept-

able and a final edit, to save space, had to be quickly completed. Spector sat down in front of the Macintosh to make the final changes. The installation guide was finished, and everyone had signed off on the layout at 9:30 p.m. that evening. The airport was 25 minutes away.

Ship Day

For a few days, the *Wing Commander* team could wind down from the physical and mental rigors of the job. All the pieces of the game had reached the fulfillment house on time, and the completed product would ship to distribution within days. It was the last week of September and Product Development had met its deadline. From beginning to end, *Wing Commander* had been completed in just 10 months, an incredible development schedule considering the complexity of the job.

Late in the day on Friday, September 26, almost everyone in the company met outside near the picnic tables for what had become an Origin tradition — the ship-day celebration. It was time to drink a couple beers or soft drinks, grab a piece of the six-foot submarine sandwich, enjoy the sunshine, and bask in the glow of having completed one of the most complex projects in Origin history. Everyone was wearing a *Wing Commander* baseball hat and everyone smiled.

After about an hour of people mulling around, congratulating one another, and rehashing the good and bad moments in the development of the game, Robert Garriott, Origin's president, climbed to the top of one of the picnic tables and asked for the assembled group's attention. It was 4:55 p.m. After a few minutes of general comments about what a great job the team had done, Garriott looked at his watch. "I would like to announce," he said, "that Chris Roberts is no longer a freelance author for Origin." It got very quiet. "As of 5 p.m. this afternoon, Chris is Origin's Director of New Technologies. Congratulations Chris, and welcome to the Origin team."

No More Freelancers

The event was more significant than the initial announcement foretold, because with the new appointment, Origin's product development would become a complete in-house operation. After years of working with freelance authors, the company was heading in a new direction and seeking total control of every aspect of the process. Snell talked about the significance of that change. "We control all aspects of development and publishing,

as opposed to giving out money to development houses and hoping to get a product. Because of that, our profitability allows us to produce what other developers just can't. We're receiving the publisher's and developer's royalties and that's what now allows us to spend up to half a million dollars on a single product. In addition, we manage our resources tightly, probably more than any other company out there. It's one of the benefits of being a development-oriented publishing house."

Earlier in the year, marketing had decided to produce a special edition of *Wing Commander* to be sold on a direct basis through Origin's sales lines. The edition would include a box signed by the author and a baseball-style *Wing Commander* hat, but marketing had been looking for something else to add to the package. Roberts came up with a real added value.

Cost-of-goods limited the number of disks that could be included in the original game, and Roberts had cut back on the number of different ships in the game even though artwork for more ships had already been created. Roberts came up with the idea of using that artwork and creating a single disk of additional missions for the special-edition. The resources necessary to complete the mission disk were minimal, so Marketing agreed to add the disk to the special edition. Ordering information was included in their fall-breaking advertisements in consumer publications.

After the release of *Wing Commander* and its immediate success, Roberts wanted to make the add-on missions, now titled *The Secret Missions*, available at retail. In addition, Marten Davies had discovered that the distribution channels were interested in selling the add-on disks in a separate package. The company was really split on the idea of selling the secret missions at retail. They had never done any add-on disks before, and there was really no way of knowing what kind of sales figures could be expected.

Chris Roberts, Jeff George, and Richard Garriott pushed hard for the idea, and finally the company agreed to cautiously produce 5000 in a new four-color package and make it available to retailers. Well, *The Secret Missions* blew right out the door, selling 15,000 units in the first few months. Needless to say, after the first 10,000, production started on a second set of missions, whose plot and story line were designed to make it possible to lead into a sequel to *Wing Commander*.

The Secret Missions

Wing Commander II: Vengeance of the Kilrathi



A self-proclaimed hacker since the early 1980s, Steve Beeman directed *Wing Commander II* and worked on the dogfight choreography in the original game. "Nothing prepared me for being in this industry," he said, but Beeman had worked at Steve Jackson Games, editing their quarterly magazine and working on other paper game projects. He left the company to become a freelance writer and landed a contract to write conversations for *Ultima VI* in 1988. When it became known that Beeman was also a programmer, he was hired by Origin to become the lead programmer and story editor for *Savage Empire*. In the course of developing the game, he was appointed director of the project.

Chris Roberts had originally conceived of *Wing Commander* as a trilogy, but following his appointment as Director of New Technologies, he knew he wouldn't be able to spend as much time on the sequels as he had on the original game. Involved in the development of other projects as well as *Wing Commander II*, Roberts gave up his directing and programming chores and decided just to take the producer's reins in the second game of the trilogy.

Stephen Beeman, who had worked on programming the dogfight choreography in the first game and had just finished directing *Worlds of Ultima: Savage Empire*, was the natural choice to direct *Wing Commander II*. He had real familiarity with the original game, had proven his directorial skills, and was available, since *Savage Empire* had shipped just a month after *Wing Commander*. In November 1990, *Wing Commander II* was ready to begin development.

Beeman had a clear view of his role. "The director is the person who has the single, driving vision of what the game is supposed to be," Beeman explained. "When other people's work doesn't match that vision, the director corrects it and guides it back on course. As producer, Chris held the purse strings and was responsible for seeing that my vision didn't stray beyond that of the company."

Before actually starting on the project, Beeman became aware of the limitations the nine-month timeline would impose on what he could do. "From a technological standpoint, we all knew *Wing Commander II* wasn't going to be the revolutionary game the first had been," he said. "There just wasn't time to include dramatic changes in the space flight. What we could do was enhance the other cornerstone of the original game, the cinematics, which provide the emotional context in which you play the game. I think of *Wing Commander II* as an evolutionary product — *Wing Commander I* on steroids."

In December, Beeman dropped a CMS Sound Blaster card in his computer and started exploring what it was capable of doing. His experiments led to one of the most exciting enhancements in *Wing Commander II*. "I messed around with the Soundblaster for a while and thought it was really cool," he explained. "I programmed something to play a digitized speech sample, and knew then that I wanted to include speech in our CES demo." The winter CES was scheduled for early January. "Then I just

went ahead and did it," he said. "We had a cheesy little microphone, no studio or sophisticated electronics, and we just sat in my office and spoke into the microphone. Then we digitized the speech with the software that came with the card. Anyone could have done it. The we worked with synchronizing the speech and graphics for the demo."

The CES demo was a rousing success. "It was like going from silent movies to talkies," Beeman noted. "Speech makes all the difference in the world. Until you're involved with developing products like this, you can't appreciate the difference between text and speech. You can convey much more information with the spoken word... information that drops out when you have to read text on the screen."

As Origin looked at its requirements as an in-house development house, they realized that additional writers were vitally needed for the production of the new generation of games. Writing conversations, introductory text, and scripts was taking on a more extensive role with every new production. In addition, Jeff George, Origin's first writer, while still doing some script and storyline work, had moved into directing.

Origin hired Ellen Guon, a professional with years of experience writing fantasy, horror, and science fiction novels, and working in computer games and children's television, as the company's lead writer. Her first assignments were working on the *Secret Missions* disks.

Soon after starting with the company she wrote and directed *The Secret Missions II: Crusade*. "[Directing] happened very fast," she said, "and supervising artists and programmers was a challenge. It was also a lot of fun. I think the company wanted one person they could point to and say, the buck stops here." As soon as the *Secret Missions* disks were out the door, Guon moved to help Stephen Beeman on *Wing Commander II*.

With a background in writing himself, Beeman produced a single-page synopsis of the story for *Wing Commander II*. Beeman then took the basic outline to Guon, and the writer and director created a list of characters and their purpose in the story. Then they worked on another outline that included the key scenes for the game. "Compared with other products I had worked on," Beeman said, "we generated a huge amount of paperwork."

A Writing Department Is Spawned



Ellen Guon lead writer and script supervisor, came to Origin from Sierra On-line where she worked on the EGA version of King's Quest I and Mother Goose. She has published a novel, *Knight of Ghosts and Shadows*, with Mercedes Lackey, and the writing team has two more in the series under contract. As a freelance writer, Guon worked in children's television and has published numerous short stories.

The following character descriptions are from one of the first drafts of the character descriptions that Guon created following those early discussions with the director.

Angel

Purpose in story: Commanding officer, love interest, relays technical information.

Angel is a beautiful French woman in her mid-thirties, an excellent combat pilot. In the original WC, she was a "by-the-book"-type tactician, and basically rather cold to our hero. During the Firekkan missions (Secret Missions II), Bossman died while flying on her wing. This has changed her whole personality...she's much more emotional now, and vulnerable, especially to the death of close friends. When Spirit is killed in WCII, her grief will prompt the love affair between herself and Bluehair. [Author's Note: Bluehair is the company's name for the player's character.]

Conversation: Formal, no contractions. Intersperses the occasional French term with her English. She has a tendency to look down, avoiding someone's eyes, when talking about something that's awkward or uncomfortable for her.

Think Sigourney Weaver mixed with Demi Moore.

Downtown

Purpose in story: Presents new outlook on human-Kilrathi relationships (son figure and special emotional dependency on Hobbes), emotional impact (his death).

Downtown is a young black man, roughly mid twenties. His family, when fleeing from their home planet during a Kilrathi invasion, was captured and sent as slave labor to the Kilrathi planet of Ghorah Khar. Years later, when Hobbes was working undercover on that planet for the Confederation, he helped the young man escape. The relationship between Downtown and Hobbes is unique... Hobbes is all the family that Downtown has. In personality, Downtown is fiery and impulsive, and very vocal in defending Hobbes against anyone who badmouths him. He has an emotional dependency on Hobbes, viewing him as a father figure.

Conversations: Standard American

Think Denzel Washington in "Glory"

The work of Beeman and Guon already displayed the change in the way games were being developed at Origin, with greater story development in the early stages. It still didn't match what often took place in the film and television industries, however.

"The scripts and character descriptions were not the absolute blueprint for the game," Guon said. "They were being created at the same time as the art. When we received some great artwork, we would alter the script and fit it in. I liked the fact that it wasn't like television, where the script would disappear and six months later you would see a finished product. Sometimes it matched your vision, sometimes it didn't."

From Guon's standpoint, writing for the computer industry had some real advantages. "It gives me the feeling of being part of a team," she said. "I'm not just handing in my script and then leaving. It provides an opportunity to evolve ideas and it's much more a living creature than a movie or television script."

At this point, Beeman handed off all the writing chores to Guon and her team of writers and started working on other aspects of the game — how it would work, the user interface, and the new features. Even though the time schedule didn't allow for any drastic technological changes, one of the first things he wanted to improve was the player's experience in space.

Beeman added a completely new generation of ships, weapons, targeting systems, and countermeasures for *Wing Commander II*. "All those items present new challenges for the player," he said. Only the Rapier, the Terran medium attack fighter, remains from the original game, and it has been upgraded to include a particle cannon gun to replace the neutron, and a chaff pod as a defensive item.

Two of the neatest additions were the turret weapons available in the Sabre attack fighter and Broadsword bomber, and the torpedoes now needed to destroy enemy capital ships. When flying a turret-equipped spacecraft, the player can shift position from the cockpit, move to one of the turret positions, and blast away at enemies. It's a real help in the Sabre when enemies are on the player's tail, and a necessity in the Broadsword when you're making a torpedo run on a capital ship and need to engage fighters at the same time. The torpedoes add a new dimension, since they're the only weapon capable of destroying enemy corvettes, destroyers, and cruisers, and require new skills on the part of the player.

Adding New Ships and Weapons



The rear-turret gun position, found in the Broadsword and Sabre fighters, adds a new dimension to the game.

Adding new ships and weapons wasn't the only change that affected the player's experience in space, since the programmers worked hard on a concept called dynamic intelligence. "The enemy ships and pilots really think in *Wing Commander II*," Beeman noted. "Unlike in the first game, enemy fighters now lead their targets with their guns, have more evasive maneuvers, and work much harder to try and attain a position on your tail."

The dynamic intelligence concept involved more than just upgrading the intelligence of the ships. In *Wing Commander II* the skill level of enemy pilots is adjusted according to the player's own skill level. The result, according to Beeman, is that the better you are as a pilot, the harder the dogfights will be to win. On the other hand, less experienced players will have an easier time.

"Dynamic intelligence creates an interesting effect," said the director. "If you meet eight enemies and manage to take out the first seven, the last ship's intelligence is increased by a few notches. Engaging the last ship results in a really tough dogfight."

The Story Evolves

Guon continued her work on the story, taking the outline of the key scenes and creating a detailed 30-page script that showed the characters, sets and animations for each mission in the game. The following is a sample from that script, taken from one of the March 1991 drafts showing the first mission.

Series 1 Mission A

Conversation 1

Characters: Prince Thrakhath, the Emperor, Imperial Guard

Sets: Kilrathi hallway, Kilrathi observation deck

Anims: Thrakhath walking, kneeling, standing; Emperor gesturing, clenching fist.

Prince Thrakhath arrives at the Imperial Palace to inform the Emperor of his progress against the humans.

Conversation 2

Characters: Bluehair, Admiral Tolwyn

Sets: Tolwyn's Office

Anims: Bluehair standing, Tolwyn sitting

Tolwyn informs Bluehair that he was acquitted by the court martial, but that his career as a pilot is nevertheless finished. Bluehair requests, and receives, a transfer.

Briefing

Characters: Bluehair, Shadow

Primary Character: Shadow

Sets: Space Station Flight Deck

Anims: Pilots standing; space station rotating in space

The Narrator sets up the scene: "Gwynedd System, Deep in Human Space. Ten Years Later."

Bluehair and Shadow discuss their upcoming patrol, talk about how much of a waste of time it is — "There haven't been any Kilrathi sightings within 20 parsecs of this place for years." Mention that Bluehair and Shadow are two out of only six pilots on the station. The station (called Caernvarvon) is referred to disparagingly as a pre-fab communications platform.

Mission

Characters: Bluehair, Shadow

Ships: Ferret

Midgames/Anims: Space station launch; space station land

Routine patrol to inspect incoming freighters is suddenly spiced up by a few Kilrathi fighters — very unusual.

Debriefing

Characters: Bluehair, Space Station officer

Sets: Exterior, Bluehair's ship

Primary character: Space Station officer

Anims: External ship, Closeup on Bluehair, VDU of Space Station officer

In-flight debriefing, no specific plot threads.

Building on the cinematic concepts that evolved from *Wing Commander I* produced a major improvement in the sequel. Beeman and Guon developed a much more involved plot, with all the twists and turns of a Hollywood thriller. The story involves the redemption of the player's naval career following a court martial for treason. The evidence was too scant to lead to a conviction, but the player's career is at a low point when the second game begins. Murder, intrigue, and treachery were woven into the script, and unlike the first game, *Wing Commander II* takes you to the scene that is most appropriate to the action instead of cycling through the same series of sets over and over again. "In *Wing Commander I*," Beeman explained, "all you had

were these talking heads that discussed tactics or where the carrier was located. *Wing Commander II* is really a movie wrapped around the missions. The players who watched all the cinematics and plays straight through will feel like they've finished a movie."

It was time to start the actual writing of the conversations in each scene, and Guon turned to her team of writers, Paul Arden Lidberg, G.P. Austin, and Brian Martin. "We had a great team that wrote the lion's share of the game itself," Guon said. "Steve and I spent most of our time just tweaking what they wrote. We divided the assignments, asking the writers which characters they wanted to work with. There was some overlap, but giving each writer a specific character helped them look at the character as their own and allowed them to develop the personality."

3D Modeling Improves Graphics Quality



Jake Rodgers left a position with his brother's architectural firm to become Origin's first 3D Modeling Artist. Rodgers built all of the ships and most of the sets in 3D for Wing Commander II.

In Roberts' role as Director of New Technologies he discovered a new software package that would have a tremendous impact on the graphics and animations in the game. What he found was *Autodesk 3D Studio*, a comprehensive 3D modeling program that he knew could save time and improve the quality of the graphics without requiring changes in the game's graphic system. The program required high-end hardware, a 486 processor, 16MB of RAM and an enormous hard drive, but he could justify the expense with the savings in art time. It was February 1990 when he found the package, and March by the time it was purchased and skilled operators were found to use it.

"We haven't changed the way we display the graphics," Beeman explained, "but we have changed the way we create them." *Wing Commander II* may not use any new graphics engine, but to the player, the graphics are quite a few steps above what appeared in *Wing Commander I*.

Jake Rodgers, who originally worked in 3D modeling for an architectural firm, was the first person Origin hired to use the new software in the production of graphics for *Wing Commander II*. "After talking with Origin, I decided that creating space ships sounded a lot more interesting than working on buildings," Rodgers explained.

As Roberts and Rodgers explored the possibilities of the software, they discovered that it would have an effect on more than just the drawings of spaceships in *Wing Commander II*. "When you're creating midgame sequences, backgrounds, or ship drawings," Rodgers said, "the 3D modeling software makes

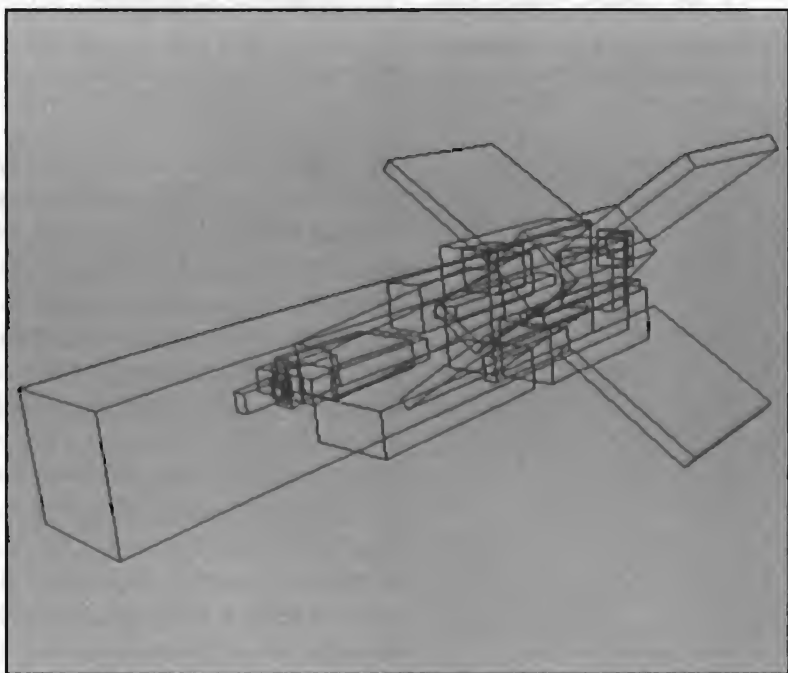
a tremendous difference. Traditionally, these items were created by painting on a computer in two dimensions. If a different angle of view or lighting effect was desired, the art had to be created again. Now we just draw items once in the modeler, create textures in a paint program, and wrap them around the shapes we just created. Then we go in, set up the lights, and position the camera, and the program renders the artwork. If the director wants to change anything, we just alter the lights and camera and have the program render it again."

One of the keys to the modeling software is the way it handles shading. The program allows the creation of images using gouraud or phong shading. According to Beeman, once you've created the light sources, gouraud shading blurs the lines between polygons. "It's not realistic like ray tracing," he said, "but its a good approximation." Phong shading, the technique employed for the images in *Wing Commander II* is a step above gouraud, creating light and shadows that are smooth across the entire surface. It produces almost photorealistic images and can simulate curved surfaces with highlights, Beeman explained, to give the appearance of a shiny surface.

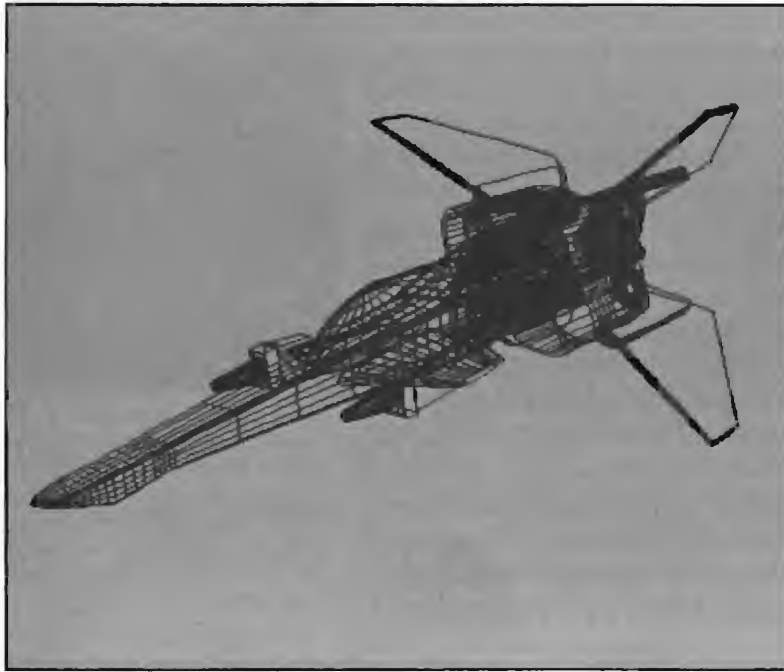
Creating static scenes is not the only advantage of the new software. "The renderer [3D modeling software] has given us the ability to do some amazing things," added Beeman. "We have some segments of the game we call flicks, animated sequences with lots of ships flying around. They're probably the most arresting part of the game. They look better than Saturday-morning cartoons, and that's made possible by the renderer. We take models, tell them to move from point A to B, and position the camera. The output is a string



Chris Douglas, a graduate of the University of Texas, was an experienced airbrush artist before joining the 3D Modeling staff at Origin. Douglas designed the Kilrathi ships and texture-mapped all the 3D ships in Wing Commander II.



Using the "primitive" tools in the modeling section of the software, the 3D artists first draw a polygonal representation of the Ferret, one of the light Terran fighters in Wing Commander II.



A mesh is drawn that creates the detailed shape of the ship for the rendering. Later, texture maps are drawn in a paint program and added to the flat and curved surfaces of the ship.

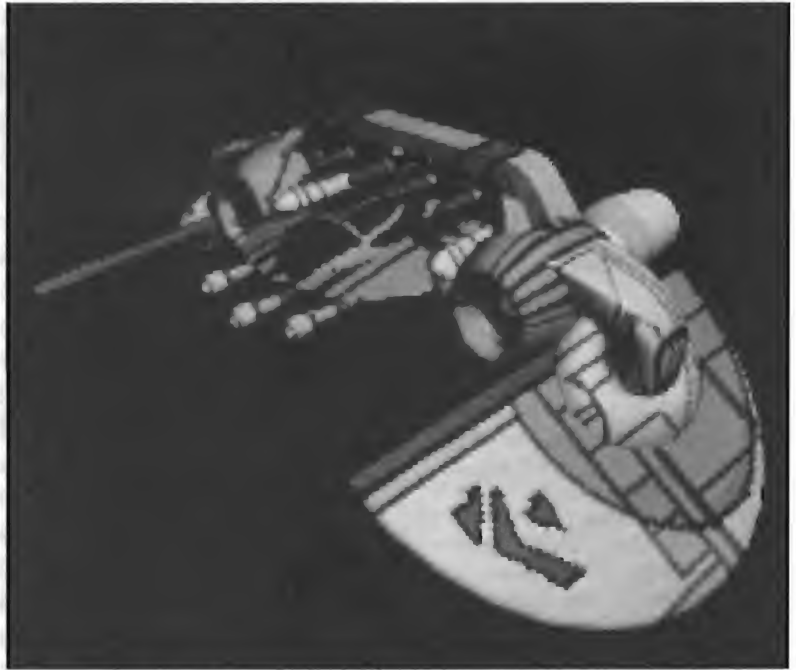
of graphics we can show on the screen."

Origin soon discovered that their 3D modeling artist was spending a lot of time away from the computer, working out the timing of animations, making preliminary paper sketches, and keeping up with the normal paperwork generated by the computer game business. Since the software was expensive, they added a second artist, Chris Douglas, so that the computer and software could be put into constant use. Douglas was a recent graduate of the University of Texas, who had specialized in airbrush on paper. He quickly adapted to working with the new software.

"The program we use is actually two programs in one," noted Douglas. "The modeler creates the geometry for the lighting and camera angles and the renderer takes that geometry and calculates the rendered image. Even with our fast computers, the renderer takes a lot of time to complete all the calculations, especially when we're wrapping textures around complex objects. For animated sequences, it might take six hours to create the shape, six hours to bit map it, and then three more hours to draw the frames in an animation. We work on a 486/25 with 16MB of RAM, and the program needs it all."

Using *Autodesk 3D Studio* for the "flicks" in *Wing Commander II*, actually provides many more options than simply moving an object from point A to point B. The program can move the lights and cameras during an animation sequence as well, allowing trucks, pans, zooms, and much more. The operator can change the focal length of the lens and the field of view, and affect distance queuing and atmosphere shading.

The 3D modeling software hasn't proven to be a replacement for all the art created in a game. "You can make it happen," Douglas said, "but it's hard to do faces, characters, or non-symmetrical objects in the program." Rodgers added that the difficulty is due to the primitive objects the program gives you to model with. "If you don't use those primitive objects," he said, "then you have to draw three views of everything. In drawing a face, which isn't symmetrical around 360 degrees, it would require a tremendous amount of manipulation to produce a suitable image." Both artists noted that animating live objects tends to produce a robot-like effect since the program can't adequately produce the subtle changes in muscles and posture.



An example of a final rendering with all the texture maps added to the surfaces. The artists can take a model and position the lights and cameras for an infinite number of renderings of any object created in the 3D modeling program.

In *Wing Commander I*, the music had been composed by a George (the Fatman) Sanger and Dave Govett, freelance musicians and composers. As Origin continued its commitment to bringing every aspect of development in-house, however, an Audio Director slot was created, and in December 1990 Martin Galway left England to fill the position.

The Audio Director's role wasn't so much to compose music as to manage the process, providing the liaison between the sound and design departments. His responsibilities included everything related to audio, including speech, sound effects, and music, and even stretched to customer service when users called with questions about the audio portion of the games. After designing and equipping an audio studio for Origin, Galway's first projects were *Martian Dreams* and *Ultima V* on the Nintendo. He started working on *Wing Commander II* in the spring of 1991.

Music, Speech and Sound Effects



Martin Galway, nephew of the internationally renowned flautist James Galway, is Origin's Audio Director. He first worked with Chris Roberts when he wrote the music for *Stryker's Run* in 1984. Later, he composed the music for another Roberts title, *Times of Lore*, on the Commodore 64. Galway left England and joined Origin in December 1990.

The Fatman had already produced some music for the game when it was in its early stages, but he wasn't looking for a full-time job and didn't want to work at Origin. Since the company wanted to internalize everything, Galway began recruiting talent, running ads in the Austin papers. It couldn't have worked out any better, and the company hired Dana Glover, a composer and musician who had done some of the music for the movies *Rain Man*, *RoboCop*, and *Apocalypse Now*.

"Dana had bought his nephew a Sega Genesis machine and was attracted by the music in the games," Galway remembered. "He thought computer games would be a neat thing to do and answered our ad. As soon as he started mentioning the projects he had worked on, I knew he had the kind of experience we were looking for. I also added two sound effects engineers, Nenad Vugrinec and Marc Schaeffen, to the team."

The styles of composition needed for a computer game are the same as those found in movies, but the chronology is completely different. As in movies, the director is trying to enhance the emotional context of a scene and requires music that complements the action. Unlike the movies, in the computer business you can't wait until the production is completed before composing the music. "The day we can do music when the game is finished will be like heaven," noted Galway.

In Origin's schedule, the music is produced at the same time the game is developed. There's a good reason for that, explained Galway. "In computer games, the music is relatively cheap from a labor standpoint when you compare it with the rest of the resources allocated for development," he said. "At this point, it wouldn't make much sense to hold up the release of a quarter-million-dollar project for the music." That doesn't make their job any easier, though.

"Producing the music while a game is being developed makes it nigh onto impossible for the musicians to get it right the first time. There's a lot of editing required" said Galway. He cited a typical example in which the composers are told that a dramatic piece is needed. "You're told to produce something that's two minutes for the first part and two minutes for the second part," he said. "Later, changes in the game require that you reduce the segment to a total of a minute and a half. We're getting better and more sophisticated at planning these things, but we have a long way to go. We had to trim a lot of music in *Wing Commander II*."

Galway's responsibilities don't end with producing the music for a game. In *Wing Commander II*, speech had become an integral element. "I already knew the best way of producing speech," Galway said. "It was just a matter of finding the hardware that was capable of doing it." For the speech in the game, almost everyone in the company was used to do the voices. All of the speech was recorded at the company's studio. "Eventually we'll be using the voices of professional actors," he said, "because there's a limit at which our own abilities stop. We'll always record the speech at our studio, because, from a directorial standpoint, if we need another take, we can do it right away."

Origin currently supports AdLib, Roland LPC1, and CLab Sound Blaster for its music and sound, although the CLab card is the only one that supports the speech standard used in *Wing Commander II*. The Roland card provides the best sound otherwise, although it's the Rolls-Royce of cards and doesn't have a large installed base yet. "We're going to support the Roland because we use it in promotional demos and we realize the value of those efforts," Galway said. "Since we're using it for demos, we might as well put it in the game. Our approach is to do the best music for the available hardware, and what we're doing here is actually driving sales of the Roland card."

Origin uses commercial software for the production of music and speech, but the company is programming new utilities to allow a broader spectrum of sound effects. Galway noted that few, if any, commercial products are available that produce acceptable sound effects and provide extensive editing resources.

Wing Commander II was originally scheduled for release in June of 1991, but the enormous size of the project led to a two-month delay. After the summer CES, Roberts and the Quality Assurance department had its first opportunity to play through the assembled game.

"*Wing Commander II* was a really big experiment with respect to the complexity of the storyline," Roberts said. "When I returned from the show, it was really the first time anyone had a chance to play the game. It had a lot of problems — not that the game was essentially flawed, but that a lot of polishing work needed to be done and some fat had to be trimmed."

When Quality Assurance reported a similar view, Roberts sat down with the director and discussed ways that some graphics

Release Delayed

Are They Really Making Interactive Movies?

could be reworked and some conversations edited or rewritten to make the story come together. "We learned some lessons," Roberts explained, "in that our schedule was too ambitious for such an enormous game. We tried to do too much in too little time. None of us had any idea that the game had grown to be so large until the end when all the pieces came together. The company's position was that the game had to be the best it could be. I think we've achieved our goal. It's a game I'm quite proud of."

The structure of Origin's Product Development department and the release of the first two games in the *Wing Commander* series provide a unique view of the software industry's relationship to the movie-making business. It's apparent that many of the resources are quite similar, with software professionals taking the roles of producers, directors, cinematographers, script writers, set designers, and editors. It's just as obvious that basic differences exist between the two industries. After all, filmmakers don't have to deal with creating an interactive medium, in which the consumer actually becomes a main character.

In comparison with the filmmaking industry then, where in time is the entertainment software business? Is *Wing Commander II*, with speech synthesis, the *Jazz Singer* of the computer world?

"You can't make a perfect correlation," explained Dallas Snell, "because we could be right where the movie industry is if we had the technology with us. But it isn't. We don't have enough space to store the sound and graphics."

Snell noted that the software industry already knows how to make movies. It has all of Hollywood's experience to borrow from. "We already know how to set camera angles to achieve different emotional responses," he said. "We know how to position characters, how to use backdrops effectively, and how to put scenes together. We have producers and directors already working at Origin. One of our producers has completed extensive postgraduate work in radio, television and film. Many of our producers and directors have directed plays. We have a lot of experience here, but we just can't do it on the scale that Hollywood can."

Snell added that *Wing Commander I* is the concept that brings software the closest to an interactive movie. It contains a segment of movie-like scenes and storyline, and then a segment of arcade-like action in simulator style where reality is modeled. "Com-

pared to the movies, we're probably in the 1950s," said Snell, "but we could easily be in the 1990s if it wasn't for the technology."

Warren Spector, who co-produced *Wing Commander I*, has a different perspective. His background is in film history, theory, production and criticism. "I look at what we're doing at Origin and I keep saying, hey, this happened in the film business in 1910, and that happened in 1920," Spector explained. "When I came to Origin two years ago, we were wrestling with many of the things the movie business was trying to do in 1912. Now, we're already up to 1926, when sound was coming in, and we're doing partial talkies just the way they did."

Spector noted that Chris Roberts was the game designer who put a finger on the fact that the industry could tell a story, move people, and touch their emotions. "I think we're still learning how to tell stories on the computer, though," Spector noted. "We're figuring out where we can be cinematic, and where trying to be cinematic just flat doesn't work. We're finding out where you want interaction, and where you want the player to sit back and watch the action."

"In the future, people are going to be scared in games, laugh in games, and cry in games," Spector said. "We're creating whole new worlds, and it's not just beep, beep, beep, zap, zap, zap, kill the monster anymore. What's that line from Mary Tyler Moore? *A little song, a little dance, a little seltzer down your pants.* We're doing that now. We're telling stories and we're letting the player actually take part in it ... and that's a whole new ballgame."

COMMAND LINE SHORTCUTS

There are a few shortcuts available in the *Wing Commander* games. They were included to help Quality Assurance playtest the game, and they weren't deleted before the game shipped because doing so might have introduced bugs. They are **not** intended to be a part of the game, but since players will become aware of them, and since this is the official strategy guide, they are listed here.

WARNING! Remember, though, that ORIGIN does **not** recommend these shortcuts be used. They destroy players' enjoyment of the game, and using them might crash your system, destroy your game, and even damage your hard disk. In fact, while ORIGIN Customer Service is very happy to help you with normal questions about *Wing Commander* or any other ORIGIN game, they are not equipped to answer questions or problems regarding the following shortcuts. **If you use them, you are doing so at your own risk.**

The shortcuts are entered on the command line, after the command that starts the game. The following command options are available:

- **Origin** — allows you to destroy any targeted enemy with the <ALT> key combination. You must be careful when using the key combination, since you can destroy friendly ships as well as enemies. In addition, if you press the keys without targeting another ship, your own is destroyed.

Example: In *Wing Commander I*, at the C:\Wing> prompt type: **wc<space>Origin**
In *Wing Commander II*, at the C:\Wing2> prompt type: **wc2<space>Origin**

NOTE: You must include this command. Other options are not enabled unless you include it. The command must be entered exactly as above, with a space between the game command and Origin. Origin must be typed with an upper case "O" and lower case "rigin."

- **s1 m1** — allows you to access a specific mission. The number following s indicates the series. The number following m indicates the mission number in that series. You can determine your series number based on the mission trees on pages 49, 121, 141, and 216. In *Wing Commander I* and both *Secret Missions*, the series and missions are represented by a number. In *Wing Commander II*, the series is represented by a number, but the mission is represented by a letter (a, b, c, d). In *Wing Commander II*, all of the series except the seventh contain four missions. Series seven has only three missions. In *Wing Commander I*, series one contains only two missions. Series 12 and 13 contain four missions each. All other series have three missions in each. In *The Secret Missions*, series four and five include three missions in each. All other series have two missions. In *Secret Missions II*, each series contains two missions.

Example (to access series 2 mission 2):

In *Wing Commander I*, at the C:\Wing> prompt, type: **wc<space>Origin<space>s2<space>m2**

In *The Secret Missions*, at the C:\Wing> prompt, type: **wc<space>Origin<space>s2<space>m2<space>z1**

In *The Secret Missions II*, at the C:\Wing> prompt, type: **sm2<space>Origin<space>s2<space>m2**

In *Wing Commander II*, at the C:\Wing2> prompt, type: **wc2<space>Origin<space>s2<space>mb**

Note: **z1** is used at the end of the line to distinguish the first *Secret Missions* from *Wing Commander I*.

- **I** (lowercase l) — allows you to proceed directly to the launch sequence for the selected mission. Just type in <space>l following your series and mission commands.

NOTE: After completing a mission you have accessed using this command option, the program automatically returns you to the DOS prompt. You cannot continue the game.

- **-k** (dash and lowercase k) — makes you invulnerable to damage from guns, missiles, asteroids or mines. Just type in <space>-k following any of the above options.

Example: If you wanted to employ all the above options, and access the fourth mission in the third series in *Wing Commander II*, at the C:\Wing2> prompt, you would type: **wc2 Origin s3 md l -k**

NOTE: All of the above options are case sensitive. Everything in the command line, except the "O" in Origin, must be typed in lower case, .

The ORIGIN Mystique

The first real contact I had with anyone from ORIGIN took place in the summer of 1988, when Chris Roberts and Richard Garriott visited MicroProse Software. They had come from Texas to demonstrate their games, *Times of Lore* and *Ultima V*, to our international sales force and some members of the European press. At the time, MicroProse was marketing ORIGIN's products in Europe. I was the company's communications manager and had coordinated the event.

At MicroProse, I had been exposed to the development of military simulations and a few historical adventure games, but meeting with Roberts and Garriott gave me a rare opportunity to discuss other genres in the industry. I liked simulations, but I was fascinated by the worlds of fantasy these two designers were creating. It was an interesting afternoon, and I gained some appreciation of what was involved in development at ORIGIN.

My next opportunity to meet with someone from ORIGIN took place in the fall of 1988 at a Software Publishers Association (SPA) conference in Washington, DC. I was still working with MicroProse at the time, and had run into Fred Schmidt, my former boss from that company. He had just started working with ORIGIN, and we agreed to catch up on the latest news and developments at dinner that evening.

When we met at the restaurant, Fred introduced me to Dallas Snell, ORIGIN's director of product development, and after the typical small talk, the conversation quickly shifted to a discussion of the entertainment software industry and our respective companies. Discussion might be the wrong word, because I remember finding it difficult to get a word in edgewise.

Fred and Dallas talked non-stop for a couple of hours about ORIGIN, its products, the people who worked there, and how they were going to make the company a leader in the industry. The strange thing was that I believed them. I knew Fred was relentless when he pursued a goal, but this was the first time I had met Dallas. The level of energy and commitment he projected was incredible as well. They had a plan, and it sounded like a good one. I was impressed — and a little jealous — and I left the meeting shaking my head in amazement.

I ended up leaving MicroProse about a month later to start my own desktop publishing, consulting, and writing business. When Fred Schmidt heard the news, he called me, and I agreed to spend a couple of months with him at ORIGIN's New Hampshire offices, working on manuals, flyers, packaging, advertising, scheduling, and budgets for the marketing department. It was a pretty good fit, and with my previous experience in the industry, I brought something to the party that they liked.

With their operations split between product development in Austin, Texas, and the rest of the company's operations in Londonderry, New Hampshire, I didn't really get a feel for what made ORIGIN special until I visited Texas in February of 1989. I was going to participate in planning sessions for their fall product line. That's when I finally experienced first-hand what Dallas had been telling me about a few months earlier.

ORIGIN was located in a large office complex in the rolling hills just outside Austin, Texas. The modern office building, with an atrium and plenty of glass, also housed insurance, real-estate, and advertising companies. It was pretty weird. On one hand, I saw a bunch of executives walking by in their three-piece suits holding briefcases. On the other, I noticed the development folks from ORIGIN strolling through the building, many in shorts, tee-shirts, and tennis shoes, carrying knapsacks full of books, games, roller blades, and computer disks. It was refreshing.

A few things struck me during my week in Texas. Number one was the schedules kept by the people in product development. I think the ORIGIN offices were the only ones in the building where you could find people working and playing almost 24 hours a day. After dinner and a night exploring Austin, Fred, Dallas, and I stopped by the office at about midnight to pick up something Fred needed from his office. I expected an empty building, but as we walked down the hallways, I discovered three people watching a video of *Return of the Jedi* in the lounge area, at least four programmers hunched over their keyboards, and a small group playing some sort of board game in the conference room. And this was a weekend night!

The second thing that caught my attention was the way people in the company got together for informal social gatherings during the work week. Wednesday was cookout day, and anyone who wanted to participate could put up a few dollars and head outside for a lunch of soft drinks and grilled food in the

picnic-grove outside the building. Late every Friday afternoon, people headed to the picnic tables for happy hour. Once a month, the company held a picnic at a local park, with lots of food, drinks, volleyball, frisbees and swimming. The company had created an atmosphere much different from any I'd experienced in the corporate world — a little more relaxed and carefree — and in the world of entertainment software, a chance to kick back between rounds of pressure-intensive development was vital.

The last impression, and the most important in that first week, was of the people who worked in development at ORIGIN. Almost without exception, they were immersed in the development of games and they really seemed to enjoy the process. I didn't get the feeling that anyone was just showing up for a job, or just putting in time to collect a paycheck. The company had collected a committed core to build upon, and they would guide the company through a period of intensive growth.

ORIGIN's management made some tough decisions in the spring and summer of 1989. Always a development-oriented company that sold its products through an affiliation with a larger company, they decided to break free, put together their own sales force, and open their own accounts in the distribution channels. They knew it would be difficult in the short term, but could reap great rewards over a long period of time. In addition, the company decided to consolidate all of its operations in Austin, Texas.

The fall of 1989 was a difficult time for the company. While the product lineup for that period was strong (*Omega*, *Windwalker*, *Knights of Legend*, and *Space Rogue*), development of those products had still targeted the Commodore and Apple markets, with conversions to the MS-DOS platform. In the meantime, MS-DOS had cornered a large share of the entertainment market. That fact, combined with the move to Austin, and the attempt to open accounts in distribution, led to disappointing sales for the year.

Ultima VI saved the day. The game was originally scheduled for fall release, but Richard Garriott was developing an *Ultima* for the first time on an MS-DOS machine and, never one to let a product out that didn't meet his high standards, delayed shipping until spring of 1990. *Ultima VI* was the first ORIGIN title to support 256-color VGA, to take advantage of faster processors, and to support the new sound boards that were making their way into home computers. It was a runaway best seller.

I stayed in contact with Fred Schmidt during those months, but I didn't really work with the company during the spring or summer of 1990. Fred kept me aware of the enormous growth at ORIGIN, and the excitement that was building over the *Wing Commander* game. On my last visit, in the fall of 1989, the company had grown to about 50 people. I learned that they now employed almost 100. With such explosive growth, I wondered whether the atmosphere had changed.

In August 1990, Fred called and asked me to work with ORIGIN while Cheryl Neeld, their creative services manager, was out on maternity leave. *Wing Commander* and *Worlds of Ultima: The Savage Empire* would be released during that period. As usual, I jumped at the chance to work with the company, and cleared my schedule for two months to accommodate his request.

I jumped into a whirlwind. *Wing Commander* would release within 30 days. *Worlds of Ultima: The Savage Empire* would release a month later. There were manuals to create, disk labels, box labels, and on top of all that, direct mail, flyers, advertisements, new packaging and books in the same time frame. Every department was operating at warp speed, and there was little time for socializing or fun. The managers were putting in the same long hours as anyone else in the company.

The period actually taught me a lot about ORIGIN. While I had seen people working long hours in the past, this went beyond anything I had experienced before. It was almost brutal, but I didn't hear complaints. There were many jobs to do, and everyone just buckled down and got them done. ORIGIN still held their Wednesday cookouts and Friday happy hours, but few people really had much time to enjoy them. Even under the intense pressure, I could tell that the atmosphere at the company, and the attitude of its employees remained the same. ORIGIN had become a large company, but had managed somehow to maintain the feeling of a smaller one.

So, what is the ORIGIN mystique? It has to be more than a few happy hours, picnics, and cookouts. It can't just be that they've collected a group of talented individuals who like to make games. It takes more than moving part of the company from New Hampshire to Texas to achieve success.

A little more than a two years ago, ORIGIN made the decision to make product development an in-house operation. They

had worked with freelance designers and authors with mixed success in previous years. At the same time that move was made, they made a commitment to push the envelope of software development. While in early years the company targeted whatever segment of the industry held the greatest market share, now they were developing products that took full advantage of the processing power of the new MS-DOS computers, the music and sound capabilities of add-on cards, increased storage capacity and memory, and the graphics capabilities offered by new hardware and software.

Those two strategic moves sparked the development process. Moving to the upper strata of the technology lifted many constraints from the programmers, artists, designers, and musicians. It unleashed new creative juices and provided a platform where development teams could finally realize their visions. *Ultima VI and VII*, *Wing Commander I and II*, and the soon to be released *Strike Commander*, are perfect examples.

Moving development in-house changed the attitudes among the staff. It fostered a spirit of cooperation where everyone in the company realized that they were all working toward a common goal. As an example, the designers and programmers listened carefully to the suggestions of the artists, writers, and playtesters, something that was often missing in the freelance author's era. I wouldn't say that every project runs like a well oiled machine, but everyone understands that you have to change the filter once in a while.

The factors that come together to make a company successful are always intangible. Attributing ORIGIN's growth to just two factors — both related to product development — is a gross simplification, and doesn't do justice to the professionalism and hard work exhibited by the company's customer service, quality control, sales, marketing, and operations departments. The ORIGIN mystique might be intangible, but the result of the company's efforts is something you can sink your teeth into. What I find most gratifying, is that with all their success, the best is yet to come. I can't wait.

Credits

The computer drawings were produced by Silver Lake Graphics of Cockeysville, Maryland on a Macintosh computer. All of the computer-generated ship drawings were based on original illustrations by Glen Johnson, courtesy of ORIGIN Systems, Inc.

The Kilrathi pilot portraits on pages 39 to 42, and the illustration on page 9, are scans of original illustrations by Glen Johnson, courtesy of ORIGIN Systems, Inc.

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All of the portrait photographs in Part II of the book were taken by Jackie Chapman of Austin, Texas.

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